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**NAVAL  
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SCHOOL**

**MONTEREY, CALIFORNIA**

**THESIS**

**INTEGRATED SWARMING OPERATIONS FOR AIR BASE  
DEFENSE: APPLICATIONS IN IRREGULAR WARFARE**

by

Ron Gray

June 2006

Thesis Advisor:  
Second Reader:

John Arquilla  
Frank Giordano

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<b>REPORT DOCUMENTATION PAGE</b>			<i>Form Approved OMB No. 0704-0188</i>	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.				
<b>1. AGENCY USE ONLY (Leave blank)</b>		<b>2. REPORT DATE</b> June 2006	<b>3. REPORT TYPE AND DATES COVERED</b> Master's Thesis	
<b>4. TITLE AND SUBTITLE:</b> Integrated Swarming Operations for Air Base Defense: Applications in Irregular Warfare			<b>5. FUNDING NUMBERS</b>	
<b>6. AUTHOR(S)</b> Ron Gray				
<b>7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)</b> Naval Postgraduate School Monterey, CA 93943-5000			<b>8. PERFORMING ORGANIZATION REPORT NUMBER</b>	
<b>9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES)</b> N/A			<b>10. SPONSORING/MONITORING AGENCY REPORT NUMBER</b>	
<b>11. SUPPLEMENTARY NOTES</b> The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.				
<b>12a. DISTRIBUTION / AVAILABILITY STATEMENT</b> Approved for public release; distribution is unlimited			<b>12b. DISTRIBUTION CODE</b> A	
<b>13. ABSTRACT (maximum 200 words)</b> <p>For decades our military has been designed and funded as a conventionally superior force on the battlefield employing the most devastating and advanced weapon systems the world has ever seen (World, War I, II, Operation Desert Storm, and Phase I of Operation Iraqi Freedom). However, in low intensity conflicts (LICs) or irregular warfare (IW) campaigns, U.S. forces are faced with an irregular enemy, one that does not choose to fight our forces directly but rather through unconventional or indirect methods. For over 60 years, the Department of Defense has had an appalling record of protecting its air bases and personnel while deployed around the world in support of low intensity conflicts. However, the way the military defends and protects these air bases still revolves around a Cold War threat, a conventional threat. The strategy of global power projection and forward presence are the cornerstone to U.S. defense. To enhance combat capabilities in the Air Force and to defeat irregular warfare (IW) forces in any environment, the answer lies within the concept of Integrated Swarming Operations (ISO); the complete integration of a highly trained security force, skilled in the employment of successful counterinsurgency tactics, techniques, and procedures (TTPs), with today's most sophisticated Command, Control, Communications, Computer and Intelligence, Surveillance, and Reconnaissance (C4ISR) platforms into a battlefield swarm. In doing so, ISO allows security forces to achieve their three critical air base defense Mission Essential Tasks (METs) of 1) tactical ISR, 2) intercepting the threat, and 3) application of force as well as the Air Force's Integrated Base Defense (IBD) Objectives of "See First, Understand First, and Act First."</p>				
<b>14. SUBJECT TERMS</b> Air Base Defense, Insurgency, Counterinsurgency, Guerilla Warfare, Base Defense, Security Forces, Command, Control, Communication, and Computer Intelligence, Surveillance and Reconnaissance (C4ISR), Integrated Base Defense Objectives, Mission Essential Tasks			<b>15. NUMBER OF PAGES</b> 91	
			<b>16. PRICE CODE</b>	
<b>17. SECURITY CLASSIFICATION OF REPORT</b> Unclassified	<b>18. SECURITY CLASSIFICATION OF THIS PAGE</b> Unclassified	<b>19. SECURITY CLASSIFICATION OF ABSTRACT</b> Unclassified	<b>20. LIMITATION OF ABSTRACT</b> UL	

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)  
Prescribed by ANSI Std. Z39-18

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**INTEGRATED SWARMING OPERATIONS FOR AIR BASE DEFENSE:  
APPLICATIONS IN IRREGULAR WARFARE**

Ron Gray  
Major, United States Air Force  
B.S., United States Air Force Academy, 1992

Submitted in partial fulfillment of the  
requirements for the degree of

**MASTER OF SCIENCE IN DEFENSE ANALYSIS**

from the

**NAVAL POSTGRADUATE SCHOOL  
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## **ABSTRACT**

For decades our military has been designed and funded as a conventionally superior force on the battlefield employing the most devastating and advanced weapon systems the world has ever seen (World, War I, II, Operation Desert Storm, and Phase I of Operation Iraqi Freedom). However, in low intensity conflicts (LICs) or irregular warfare (IW) campaigns, U.S. forces are faced with an irregular enemy, one that does not choose to fight our forces directly but rather through unconventional or indirect methods. For over 60 years, the Department of Defense has had an appalling record of protecting its air bases and personnel while deployed around the world in support of low intensity conflicts. The way the military defends and protects these air bases still revolves around a Cold War threat, a conventional threat.

The strategy of global power projection and forward presence are the cornerstone to U.S. defense. To enhance combat capabilities in the Air Force and to defeat irregular warfare (IW) forces in any environment, the answer lies within the concept of Integrated Swarming Operations (ISO); the complete integration of a highly trained security force, skilled in the employment of successful counterinsurgency tactics, techniques, and procedures (TTPs), with today's most sophisticated Command, Control, Communications, Computer and Intelligence, Surveillance, and Reconnaissance (C4ISR) platforms into a battlefield swarm. In doing so, ISO allows Air Force Security Forces to achieve their three critical air base defense Mission Essential Tasks (METs) of 1) tactical ISR, 2) intercepting the threat, and 3) application of force as well as the Air Force's Integrated Base Defense (IBD) Objectives of "See First, Understand First, and Act First." This thesis will provide a tactical air base defense strategy in a three-phased approach to deter, delay, deny and defeat irregular warfare forces.



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## **ACKNOWLEDGMENTS**

I would like to thank Professors John Arquilla and Frank Giordano for all their help in guiding me down the path of swarming, counterinsurgency and applications for air base defense in irregular warfare. Two professionals who also significantly contributed many critiques, edits, and overall thesis conceptual design recommendations are Dr. Sean A.J. Edwards and USAF Major (P) D.T. Young. Many thanks too for the sharing of ideas and wisdom of the Defense Analysis department at the Naval Postgraduate School who were critical in the development of some of the ideas presented in this thesis, particularly Professors Gordon McCormick, Pete Gustaitis, George Lober, Kalev Sepp, Anna Simons, Erik Jansen, Doug Borer, Glenn Robinson, and Hy Rothstein. The contributions of my classmates were invaluable in vetting ideas and concepts as well, especially USAF Major(s) Marc Sheie, Ron Stuewe, USA Major(s) Kirk Windmueller, Kevin Kirby, John Crisafulli, Lawrence Basha, Ed Evans, John Dike, Jamie Spies, Joel Thomas, Hank Henry, CPT R.B. Nelson, USA CWO Tom Newell, and Navy Lieutenant(s) Steve Draper, Rafael Duyos, Scott Harris, Ed Mason, and Michelle Mui.



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## **I. INTRODUCTION**

### **A. INTEGRATED SWARMING OPERATIONS FOR AIR BASE DEFENSE: APPLICATIONS FOR IRREGULAR WARFARE**

For decades our military has been designed and funded as a conventionally superior force on the battlefield employing the most devastating and advanced weapon systems the world has ever seen (World, War I, II, Operation Desert Storm, and Phase I of Operation Iraqi Freedom). However, in low intensity conflicts (LICs) or irregular warfare (IW) campaigns, U.S. forces are faced with an irregular enemy, one that does not choose to fight our forces directly but rather through unconventional or indirect methods. For over 60 years, the Department of Defense has had an appalling record of protecting its air bases and personnel while deployed around the world in support of low intensity conflicts.<sup>1</sup> From the jungles of Vietnam to the built-up areas in Iraq, U.S. service members are forward deployed in expeditionary “hot spots” where toppled regimes and non-state actors are posing a serious irregular threat to U.S. forces. “Armies designed to prevail on the conventional battlefield are insignificant from an unconventional approach.”<sup>2</sup> The Air Force has recognized this as the next serious threat in the way it conducts its air base defense (ABD) mission. The dominance of American air power and the potential for adversaries to counter with an “asymmetric” warfare strategy make our air bases and geographically separated units attractive targets. Our adversaries know they can’t compete against United States Air Force assets in the skies, so a logical alternative is to destroy air and space assets on the ground, where their lethality is negated.<sup>3</sup> The strategy of global power projection and forward presence is the cornerstone to U.S. defense. However, the way the military defends and protects these air bases still revolves around a Cold War threat, a conventional threat. To enhance combat capabilities in the

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<sup>1</sup> For more on this see Chapter 2 of this thesis which includes air base attack data from 1942-1992 as well as attack data from Operation IRAQI FREEDOM.

<sup>2</sup> Professor Gordon McCormick, class notes, Seminar in Guerilla Warfare, July 2005; Naval Post Graduate School; Monterey, CA.

<sup>3</sup> AF/XOR, Capability Development Document for Integrated Base Defense Security System (IBDSS), Increment: 1; 17 February 2005, p 2; similar comments can be found in Check Six Begins on the Ground and Snakes in the Eagles Nest.

Air Force and to defeat irregular warfare (IW) forces in any environment, the answer lies within the concept of Integrated Swarming Operations (ISO): that is, the complete integration of a highly trained security forces, skilled in the employment of successful counterinsurgency tactics, techniques, and procedures (TTPs), with today's most sophisticated Command, Control, Communications, Computer and Intelligence, Surveillance, and Reconnaissance (C4ISR) platforms into a battlefield swarm. In doing so, ISO allows security forces to achieve their three critical Mission Essential Tasks (METs) of air base defense - 1) tactical ISR, 2) intercepting the threat, and 3) application of force<sup>4</sup> - as well as the Air Force Integrated Base Defense (IBD)<sup>5</sup> objectives of "See First, Understand First, and Act First."<sup>6</sup> The remaining portions of this chapter will discuss the thesis' methodology and provide a chapter overview of key concepts.

## **B. THESIS METHODOLOGY**

This thesis will integrate several concepts derived from existing Air Force Air Base Defense (ABD) doctrine objectives, specific Air Force Security Force's Mission Essential Tasks (METs) with historically proven successful counterinsurgency TTPs developed from four distinct case studies. From this merger, a strategy is developed that will transform the ends, ways, and means security forces conduct ABD missions during IW campaigns. Below is a flow chart on the thesis methodology.

---

<sup>4</sup> These METs were described by the current A-7S, BG Holmes during a CORONA out brief to the Air Force Space Command Security Forces Directorate (AFSPC/A7S) in December 2004.

<sup>5</sup> The integrated application of offensive and defensive action, both active and passive, taken across the ground dimension of the force protection (FP) battlespace to achieve local and area dominance in support of force protection. See AFTTPs 3-10.1, August 20 2004; p. 35.

<sup>6</sup> Ibid, p.10.

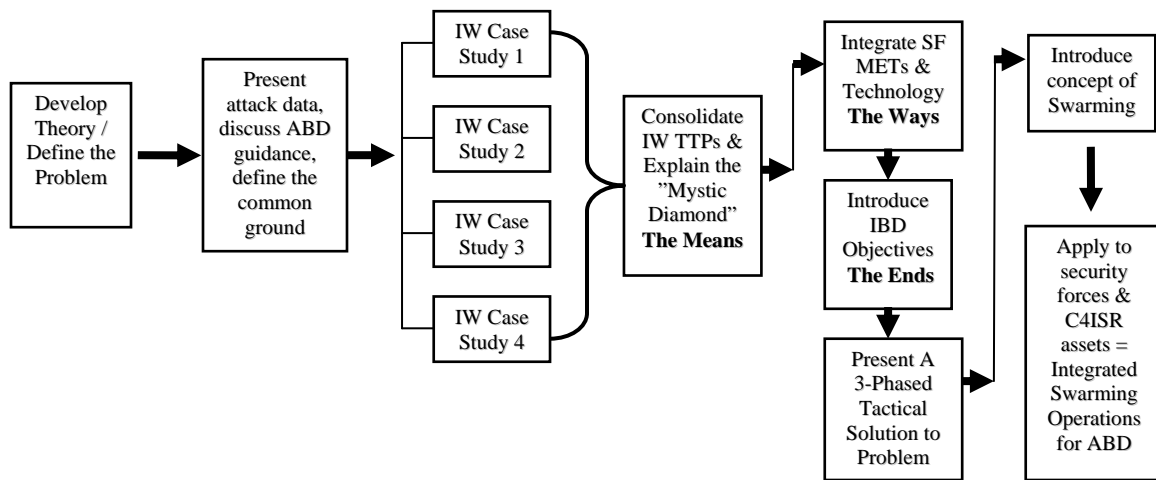


Figure 1 Flowchart of Thesis Methodology

Chapter II will compare and contrast Joint Publication guidance regarding base defense tactics, techniques, and procedures (TTPs) and the conventional threat methodology and its relevancy today in the long war or Global War on Terrorism (GWOT). For all references to the term irregular warfare (IW), the author uses the definition as provided in the 2006 Quadrennial Defense Review (QDR) Report (irregular warfare – conflicts in which enemy combatants are not regular military forces of nation-states.<sup>7</sup> Secondly, chapter two will analyze enemy attack data compromised from complete case studies on attacks to air bases from 1940 to 1992 as well as a brief study of enemy attacks on air bases from Operation IRAQI FREEDOM. Lastly, based on this standoff attack data, it is clear that all future ABD defense planning and operations will need to concentrate on the area outside the base perimeter to add external depth to base defense operations. The Air Force defines this area as the “area of influence” - the area wherein the commander can directly influence operations and will expand and contract depending on friendly force dispositions. Commanders should strive to ensure that their area of influence coincides with the area from which an enemy can impact operations through the use of standoff weapons such as MANPADS, mortars and rockets.<sup>8</sup>

<sup>7</sup> Quadrennial Defense Review Report, 6 February 2006: p. 15.

<sup>8</sup> AF TTPs 3-10.1, 20 August 2004, p. 10.

The third chapter discusses four case studies involving successful counterinsurgency (COIN) TTPs. From a summary of insurgent conflicts by Nathan Leites and Charles Wolf to additional uprisings, and guerilla warfare operations in Malaya, the Philippines, and Vietnam, critical elements of successful counterinsurgency campaigns will be presented. Fundamental TTPs will serve as the foundation for executing the three critical phases of a COIN strategy known as the “Mystic Diamond” – a strategy that today’s security forces must also adopt in their ABD planning. These proven principles provide “the ways” to conduct IW campaigns within the area of influence. Also extracted from these proven principles, just as conventional forces design and execute attacks against enemy centers of gravity (COGs) are IW COGs. These centers of gravity directly evolve from the three distinct phases of COIN strategy.

In Chapter IV, the means of conducting an integrated base defense with crucial air assets will be examined. It will introduce the three Air Force Security Forces Mission Essential Tasks of air base defense as the key components or the “the means” of conducting irregular warfare campaigns – 1) tactical ISR; 2) intercepting the threat; 3) application of force. The Air Force’s robust technological C4ISR platforms become force multipliers in IW campaigns and enable the rapid dissemination of critical human intelligence (HUMINT), signal intelligence (SIGINT) and electronics intelligence (ELINT) to the ground force commander. Today’s technology magnifies the effects of all other Integrated Base Defense (IBD) concepts and is a key component in achieving battle space domination. It is crucial to take advantage of the technological superiority of today’s military and integrate personnel and technology into a seamless defense. This “integrated systems” approach allows the security force commander a common operating picture vital in making more accurate and better tactical decisions so the right level of force can be applied to counter the enemy threat.<sup>9</sup> To tie the “ways and means” together into a seamless air base defense strategy for IW, the IBD objectives of “see first, understand first, and act first” will be presented as the “ends” for countering IW threats. Lastly, this chapter provides a tactical ABD strategy in a three-phased approach to deter, delay, deny and defeat IW forces on the battlefield.

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<sup>9</sup> AF TTPs 3-10.1, 20 August 2004, p. 11.

Chapter V will introduce ‘swarming’ as the primary technique or concept that synchronizes both ground forces (quick reaction forces) and C4ISR platforms into an integrated, irregular warfare strategy. Specifically, swarming has many advantages. From 23 case studies analyzed by Dr. Sean Edwards as well as the authors responsible for making the link between natural swarms (bee and ant colonies) and battlefield swarms (Dr. John Arquilla and David Ronfeldt), a framework for swarming operations within the area of influence will present clear advantages to both security forces and dedicated C4ISR assets. Of the many principle advantages that swarming offers to air base defense, distinct similarities will be drawn between those principles of IW that evolve from this new ABD strategy (surprise, speed and maneuver, and efficiency of lethality) and Edwards’ analysis of swarming on the battlefield.

Chapter VI provides the conclusion of this thesis and summarizes the conceptual highlights from each chapter. In addition, several critical elements from the 2006 QDR Report will complete the insurgent and compelling need to transform current Air Force security forces into IW capable ground force. Just as the Air Force continues to provide air superiority and air dominance in IW campaigns, it too must also treat the air base defense mission with the same vision and focus. The Air Force should be able to deploy anywhere around the world without having to rely on extrinsic forces or sister service support to defend and ‘fight’ its air bases.

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## II. THREATS TO AIR BASES IN IRREGULAR WARFARE

**The large ground organization of a modern Air Force is its Achilles' heel.**

Basil Henry Liddell Hart, *Thoughts on War*, 1944

As U.S. Marine Corps General Anthony Zinni has noted, “Military conflict has changed and we have been reluctant to recognize it. Defeating nation-state forces in conventional battle is not the task for the 21st century. Odd missions to defeat transnational threats or rebuild nations are the order of the day, but we haven’t yet adapted.”<sup>10</sup> For Zinni, state building, peacekeeping, and counterinsurgency are not military operations other than war; they *are* war.

Chapter II will analyze enemy TTPs via a complete case study on air base attacks from 1940 to 1992 and more recently, a brief overview of attacks on air bases in Iraq. Based on these enemy TTPs, it is clear that future threats will revolve around the enemy’s intent to engage U.S. forces using irregular attacks to disrupt, delay, and destroy military assets and forces on air bases. Next, this chapter will compare and contrast Joint Publication guidance regarding base defense tactics, techniques, and procedures (TTPs) with the attack data presented and offer up several criticisms to this nearly decade old defense planning document – a transformation to air base defense strategy. Because of the nature of these irregular attacks, it is clear that joint air base defense doctrine defines a common ground where almost all air base attacks originate. This new common ground – defined by the Air Force as “the area of influence” – must become the cornerstone from which all future air base defense strategies and operational planning occurs.

In October 2004, the Air Force’s Office of Primary Responsibility (OPR) for protecting air bases, Lieutenant General Ronald E. Keys, told a Naval Postgraduate School audience that air base defense (ABD) was one of the five critical problems

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<sup>10</sup> Tom Clancy, with GEN Anthony Zinni, U.S. Marine Corps, Retired, and Tony Koltz, *Battle Ready* New York: G.P. Putnam and Sons, 2004, 424.



without a solution currently facing the U.S. Air Force.<sup>11</sup> This thesis will provide a solution to this long standing problem by presenting an ends, ways, and means approach based on integrated swarming operations involving security forces, technology, and counterinsurgency tactics, techniques, and procedures.

#### **A. HISTORICAL CASE STUDIES OF ATTACKS TO AIR BASES**

Studying threats to air bases is definitely not a new idea. A quick review of this data clearly shows the enemy's track record for attacking air bases implementing unconventional or irregular methods. The 1998 United States Air Force Scientific Advisory Board Report on the United States Air Force Expeditionary Forces (AEF) captured attack data from David Shlapak and Alan Vick's 1995 RAND study entitled, *Check Six Begins on the Ground*. Table 1 below shows that there were 645 ground attacks on airfields from 1940 through 1992. The data collected found that 75 percent were stand-off attacks and 22 percent were penetrations (See Figure 2); 60 percent resulted in destroyed aircraft and 7 percent denied use. Only three of these attacks were acts of terrorism, but they destroyed nine aircraft and damaged three. The vast majority (75 percent) were stand-off attacks, which could be anything from snipers to guided missiles. Snipers, for example, can operate from a range of 50 m in an enclosed area to 1,000 m in an open area. The study further discusses the enemy's intended targets. Specifically, in Figure 3 below, the purpose of the attacks were to destroy aircraft (60 percent), harass the defenders (27 percent), capture the airfield (6 percent), or deny use of the airfield (7 percent). Finally, the insertion techniques used in the ground attacks are shown in Figure 4.<sup>12</sup>

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<sup>11</sup> At the time, General Keys was the Air Force Deputy Chief of Staff for Air and Space Operations, AF/XO

<sup>12</sup> 1998 United States Air Force Scientific Advisory Board Report on the United States Air Force Expeditionary Forces (AEF).

<b>Conflict</b>	<b>Incidents</b>	<b>Aircraft Destroyed</b>	<b>Aircraft Damaged</b>
World War II	130	367	NA
Korea	3	0	0
Vietnam	493	393	1,185
Falklands	1	11	0
El Salvador	2	15	18
Grenada	2	0	0
Afghanistan	3	9	0
Panama	4	1	0
1991 Gulf War	3	36	0
Philippines	1	2	1
Terrorism	3	9	3
<b>Total</b>	<b>645</b>	<b>843</b>	<b>1,207</b>

Table 1 Ground Attacks on Airfields, 1940-1992 <sup>13</sup>

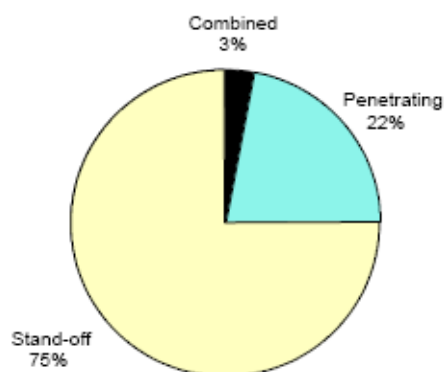


Figure 2 Tactics Used in Airfield Attacks<sup>14</sup>

<sup>13</sup> David Shlapak and Alan Vick, *Check Six Begins on the Ground*, RAND, 1995, p. 32.

<sup>14</sup> Ibid, p. 34.

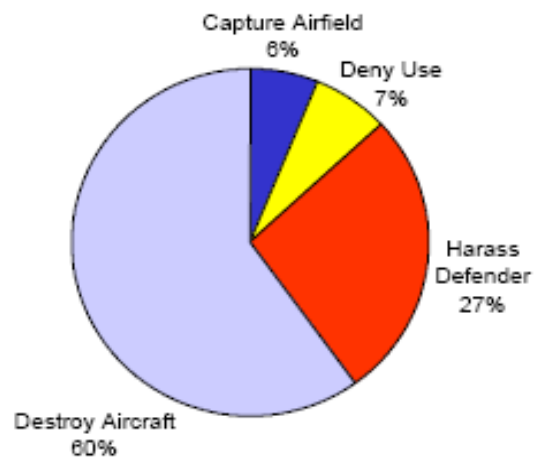


Figure 3 Airfield Attack Objectives<sup>15</sup>

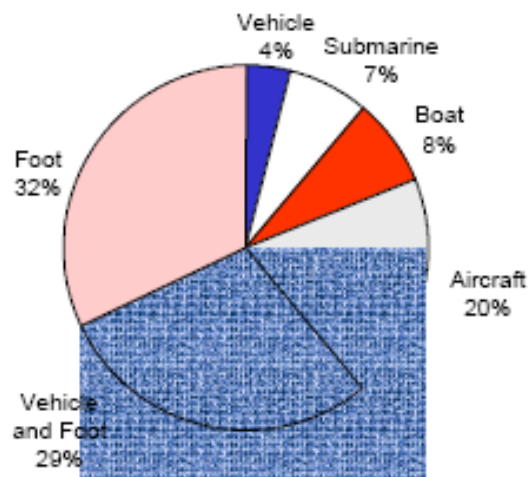


Figure 4 Insertion Techniques Used in Airfield Attacks (Except Vietnam)<sup>16</sup>

<sup>15</sup> David Shlapak and Alan Vick, *Check Six Begins on the Ground*, RAND, 1995; p. 24.

<sup>16</sup> Ibid, p. 24.

More recently, in Operation IRAQI FREEDOM, U.S. air bases in Iraq have been attacked over 1,000 times in just two years.<sup>17</sup> Although the results of these attacks are classified by United States Central Air Forces (USCENTAF) Forward Staff, it is clear that our current air base defense doctrine is ineffective in deterring, detecting, delaying, and denying enemy attacks to our expeditionary air bases especially those attacks outside the base perimeter.<sup>18</sup> As for improvised explosive devices (IEDs), American forces have seen them before as well. For example, owing to the US military's emphasis on firepower, in Vietnam in 1966, over 27,000 tons of unexploded ordnance (artillery shells that were fired or bombs dropped by aircraft), or "duds" were generated. The Viet Cong proved expert at converting these duds into mines and booby traps—their version of IEDs. Over 1,000 US soldiers died that year from these weapons. During the first six months of 1967 the problem worsened, as 17 percent of all US casualties (539 killed and 5,532 wounded) were caused by these devices.<sup>19</sup> Today in Iraq, roadside IEDs are the insurgents' primary method of attack. In 2004, insurgents used a total of 5,607 roadside IEDs and in 2005 that number nearly doubled to 10,953. Since July 2003, 726 United States troops have been killed by these devices.<sup>20</sup>

## **B. TRANSFORMATION WITHOUT STRATEGY: AN ANALYSIS OF JOINT SERVICE AIR BASE DEFENSE GUIDANCE**

Recently, the DoD announced plans to transfer eleven U.S. Army installations in Germany back to the German government in fiscal year 2007. This move allows the Army to return 50,000 soldiers from overseas duties in Germany and Korea as the service heads toward its biggest troop reorganization since World War II.<sup>21</sup> "These changes are

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<sup>17</sup> Brigadier General Robert Holmes, Director of Air Force Security Forces, "Security Forces Transformation" brief to the Air Force CORONA Conference, Dec 2004.

<sup>18</sup> E-mail correspondence and requests to the Central Air Forces (CENTAF) Forward Staff (Deputy Director for Force Protection, Lt Col John Brooker) determined that all attack data was classified and not releasable. A request to provide this attack data without mentioning specific bases was also classified and not releasable for this unclassified thesis.

<sup>19</sup> Andrew Krepinevich (2005) "The War In Iraq – An Interim Assessment", p. 98.

<sup>20</sup> Brookings Institute Iraq Index Tracking Variables of Reconstruction & Security in Post-Saddam Iraq March 7 2006 retrieved from <http://www.brookings.edu/fp/saban/iraq/index.pdf> on March 9 2006.

<sup>21</sup> Pentagon announcement in "Army Plans To Return 11 Installations To Germany In Fiscal Year 2007" retrieved on August 1 2005; [http://www.insidedefense.com.libproxy.nps.navy.mil/secure/defense\\_document.asp?f=defense\\_2002.ask&docnum=ARMY-17-30-7.Army](http://www.insidedefense.com.libproxy.nps.navy.mil/secure/defense_document.asp?f=defense_2002.ask&docnum=ARMY-17-30-7.Army).

part of the Department of Defense's overall plan (the integrated global presence and basing strategy) to transform the military to increase strategic responsiveness and flexibility in the face of current and anticipated future threats, and are the result of extensive consultation with our German allies," according to a July 29 DoD announcement. "A fundamental part of this plan is to position U.S. forces around the globe to be best able to respond to the threats of the new security environment."

Additionally, the Pentagon announced plans to proceed with the global presence and basing strategy that would target troop movements -- primarily Army divisions in Germany -- as the Defense Department emphasizes mobility and agility and pulls troops out of its large permanent bases in favor of more austere "forward operating locations," Defense Secretary Donald Rumsfeld said in an August 15, 2004, press conference en route from Russia.<sup>22</sup> These austere forward operating locations are air bases now established throughout Iraq, Afghanistan, and the Middle East as part of the long war or the Global War on Terrorism (GWOT). This may seem like a complete departure from the air base defense missions currently employed throughout the world, but this shift of emphasis or transformation in strategy is exactly what today's Air Force requires. Even the former Air Force Chief of Staff, General John Jumper, agrees that explaining the term transformation to an institution (like the Air Force) that has been stove piped for years is annoying: "It's very frustrating to think that people view transformation as getting rid of everything we have right now rather than integrating that which we already own..."<sup>23</sup> But in order for the transformation to be optimal, a strategy must exist that supports, enables, and validates this shift in emphasis from the 20<sup>th</sup> Century Cold War mindset to the complex, dynamic challenges of irregular warfare in the 21<sup>st</sup> Century.

The most current guidance that describes how the armed forces operate in an expeditionary environment and conduct air base defense is found in Joint Publication 3-10.1, *Joint Tactics, Techniques, and Procedures for Base Defense*, published in 1996. This document is the framework for how air base defense operations across the services

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<sup>22</sup> Pentagon announcement in "Army Plans To Return 11 Installations To Germany In Fiscal Year 2007"; retrieved on August 1 2005; [http://www.insidedefense.com.libproxy.nps.navy.mil/secure/defense\\_document.asp?f=defense\\_2002.ask&docnum=ARMY-17-30-7.Army](http://www.insidedefense.com.libproxy.nps.navy.mil/secure/defense_document.asp?f=defense_2002.ask&docnum=ARMY-17-30-7.Army) p. 11.

<sup>23</sup> Gaudiano, Nicole. *Old Warrior, new ideas*. Air Force Times: May 30 2005 p 20.

should be implemented. Despite the fact that the guidance is nearly a decade old, it still includes universal principles that are critical in the protection of resources and personnel on a military installation. However, regardless of its relevance to conventional threats – based on the Cold War Soviet threats of the 70’s and late 80’s – this document lacks joint service guidance that addresses an enemy that implements irregular warfare as its primary method of attack. For instance, Joint Publication 3-10.1 lists three main types of threats that must be countered by U.S. forces. These three threats are defined below:

Level I: Agents, saboteurs, sympathizers, terrorists.

Level II: Small tactical units, irregular warfare forces, guerrillas.

Level III: Large tactical force operations, including airborne, heliborne, amphibious, infiltration, and major air operations.<sup>24</sup>

The term unconventional warfare (UW) is used to demonstrate a valid Level II threat and a thorough search of the rest of the publication uncovered only one other instance of the term UW with no definition provided. The Department of Defense Dictionary of Military and Associated Terms Joint Publication 1-02 defines unconventional warfare as:

A broad spectrum of military and paramilitary operations, normally of long duration, predominantly conducted through, with, or by indigenous or surrogate forces who are organized, trained, equipped, supported, and directed in varying degrees by an external source. It includes, but is not limited to, guerrilla warfare, subversion, sabotage, intelligence activities, and unconventional assisted recovery. Also called **UW**.<sup>25</sup>

For this thesis, the term irregular warfare (IW) replaces UW and the definition is derived from the 2006 Quadrennial Defense Review (QDR) as mentioned in Chapter one. Additionally, Joint Publication 3-10.1 lacks specific tactics, techniques, and procedures (TTPs), on how to effectively neutralize the three threat levels. Here is the Joint Staff’s solution for defending against these three types of threats:

**Defending Against Level I Threats.** At this level, available base assets should be able to detect and defeat enemy activities. Day-to-day security activities are conducted by

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<sup>24</sup> Joint Publication 3-10.1, Ch 1, p. I-5.

<sup>25</sup> Department of Defense Dictionary of Military and Associated Terms Joint Publication 1-02

the forces assigned to the base, usually as tasks in addition to their primary duties. At Level I, base defense forces must be trained and exercised to permit smooth transitions to Level II and Level III.

**Defending Against Level II and Level III Threats.** After transition from a Level I posture to a posture able to engage Level II and Level III threats, base defense forces must be able to disrupt or delay hostile action until response forces or Tactical Combat Forces (TCF) can be committed.<sup>26</sup>

Clearly the DoD can provide better guidance and TTPs in developing air base defense solutions or should each service develop their own TTPs for protecting its air bases? The future of warfare and threats to U.S. air bases in an IW environment revolve around unconventional TTPs (standoff attacks with rockets, mortars, and sniper fire; insider, saboteur suicide bombings and vehicle-borne improvised explosive devices (VBIED)) not the conventional Level III threats as listed in Joint Publication 3-10.1. Since the Korean War, the IW threat has been the only true threat to U.S. air bases. Not only is this a threat that has plagued the military for the past 60 years, but it will continue to be the most common threat our military faces in future irregular warfare campaigns.

If the strategists and DoD planners think our armed forces can just as easily transition from conventional to unconventional threats with no clear-cut strategy to organize, train, and equip today's military, the armed forces are setting themselves up for failure. "Armies designed to prevail on the conventional battlefield are insignificant from an unconventional approach."<sup>27</sup> Maybe the U.S. military has failed to adopt the proper strategy to counter these threats. The old quote from General George H. Decker, Army Chief of Staff from 1960-1962, "***Any good soldier can handle guerillas***"<sup>28</sup> is exactly the failed strategic mindset the armed forces must not embrace. During Gordon McCormick's thirty-year study of irregular warfare, his ideology has been cemented

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<sup>26</sup> Joint Publication 3-10.1, Ch 4, p. IV-6.

<sup>27</sup> Classnotes, Professor Gordon McCormick's "Seminar in Guerilla Warfare", July 205, Naval Postgraduate School, Monterey, CA. Professor McCormick been studying irregular warfare for over 30 years and is the Chairman, Defense Analyst Department.

<sup>28</sup> Andrew F. Krepinevich, Jr., The Army and Vietnam, Baltimore, John Hopkins University Press, 1986.

around the understanding that irregular warfare is THE method insurgents use to attack conventional forces and is the cornerstone to the development of an irregular warfare strategy.<sup>29</sup> After reviewing the attack data over the past 60 years as well as the outdated joint service guidance on air base defense tactics, techniques, and procedures, it is clear that the area from which these attacks originate must become the common ground or focal point in the planning, organizing, and execution of future air base defense strategies.

**C. DEFINING THE COMMON GROUND - INTEGRATED BASE DEFENSE AND THE “AREA OF INFLUENCE”**

Since 75% of all attacks to air bases have occurred outside the installation or the air base perimeter, it is easy to understand that this area is critical to successful air base defense planning and operations. The Air Force has defined this area where almost all standoff attacks occur as the “area of influence” - the area wherein the commander can directly influence operations and will expand and contract depending on friendly force dispositions. Commanders should strive to ensure that their area of influence coincides with the area from which an enemy can impact operations through the use of standoff weapons such as MANPADS, mortars and rockets.<sup>30</sup> Air Force Tactics, Techniques, and Procedures 3-10.1 is the primary doctrinal reference for tactical-level IBD. Air Force IBD is the integrated application of offensive and defensive action, both active and passive, taken across the ground dimension of the battle space to achieve local and area dominance in support of force protection (FP).<sup>31</sup> Figure 2 below portrays the area of influence as depicted by the green area outside the base perimeter. Commanders must be able to control this area of influence to achieve the “4Ds” to air base defense – deter, delay, deny and defeat.

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<sup>29</sup> Professor McCormick Class notes, Seminar in Guerilla Warfare, July 2005, Naval Postgraduate School, Monterey, CA

<sup>30</sup> AF TTPs 3-10.1, 20 August 2004, p. 10.

<sup>31</sup> Ibid, p. 1.



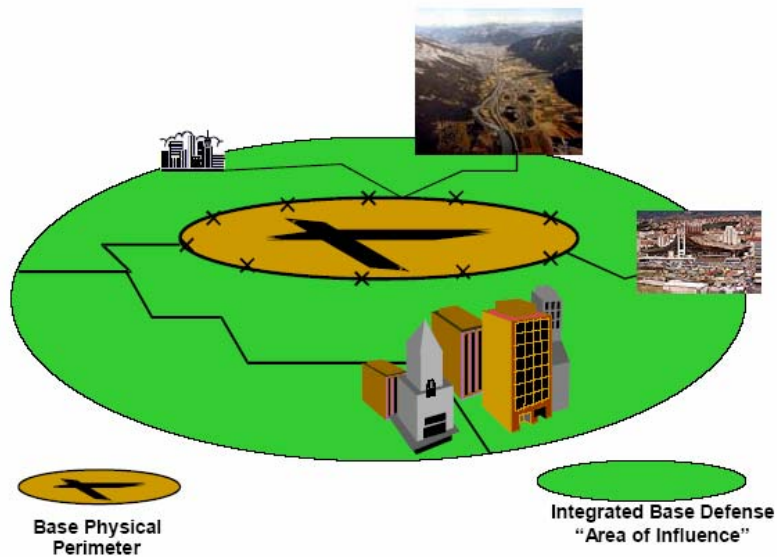


Figure 5 Area of Influence – The Common Ground for Air Base Defense

If future Air Expeditionary Force (AEF) Commanders cannot control the area of influence, these locations should be avoided. Commanders, who are the responsible agents for ensuring adequate force protection, should opt for locations where this control can occur. Just as General Moseley, the current Chief of Staff, United States Air Force, has said in his recent Security Forces Transformation letter:

Innovation and transformation are part of our Air Force heritage. Keeping in line with that Heritage, we must successfully meet the challenges of the new security environment and be ready for the next. We must transform our security forces into highly trained and equipped Joint war fighters operating inside and outside the wire and ensuring uninterrupted 24/7 operations.<sup>32</sup>

But the question remains just how do security forces make this transition into the area of influence to “go outside the wire” and get their arms around the threats to our airfields and facilities?<sup>33</sup>

SUMMARY: Chapter II analyzed enemy attack data compromised from complete case studies on attacks to air bases from 1940 to 1992 as well as a brief study of enemy

<sup>32</sup> See Department of the Air Force Memo dated 30 January 2006; Memorandum for ALMAJCOM/CC, distribution C; Subject: “Security Forces Transformation”; signed by General T. Michael Moseley, Chief of Staff, USAF.

<sup>33</sup> Comments taken from opening paragraph of CSAF memo referenced in footnote 32.

attacks on air bases from Operation IRAQI FREEDOM and found that nearly 75% of all attacks occur outside the base perimeter. Chapter two reviewed Joint Publication guidance regarding base defense tactics, techniques, and procedures (TTPs) and found the guidance to be centered on the Cold War threat spectrum and was ill-prepared for fighting irregular warfare threats (low intensity conflicts like insurgencies, rebellions, or guerilla warfare). Lastly, based on the enemy standoff attack data, a common ground must be established so commanders can influence the enemy threat beyond the base's perimeter that the Air Force defines as the 'area of influence.' It is this critical area beyond the fence line that all future air base defense planning and operations must take place to counter irregular warfare threats to U.S. personnel and resources.

Chapter III discusses four specific case studies involving successful counterinsurgency (COIN) TTPs that security forces need to incorporate into their air base defense planning and training repertoire. From insurgent conflicts in general to rebellions, uprisings, and guerilla warfare in Malaya, the Philippines, and Vietnam, critical elements of successful counterinsurgency campaigns will be presented. Fundamental TTPs will serve as the foundation for executing the three critical phases of a COIN strategy known as the "Mystic Diamond." These proven principles provide "the ways" to conduct irregular warfare campaigns within the 'area of influence.'

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### III. CRITICAL ELEMENTS OF IRREGULAR WARFARE

#### A. UNDERSTANDING THE PAST: AN OVERVIEW OF IRREGULAR WARFARE (INSURGENCIES, REBELLIONS AND GUERRILLA WARFARE)

Terrorists and insurgents require at least tacit, if not active, support from the local population to operate effectively. In the words of one British general responsible for counter-insurgency operations “The shooting side of the business is only 25 percent of the trouble. The other 75 percent is getting the people of this country behind us.”<sup>34</sup> However, the military activities at which today’s armed forces excel, such as precisely destroying buildings or vehicles, may work counter to this “hearts and minds” strategy. According to one study “counter terrorist military attacks against elusive terrorists may serve only to radicalize large sectors of the (Muslim) population and damage the U.S. image worldwide.”<sup>35</sup> If these explanations of irregular warfare are correct, then how does a nation counter such a threat when it is faced with such irregular approaches? By carefully examining six authors (Martin Van Creveld, Nathan Leites, Charles Wolf, Robert Komer, Larry Cable, and Andrew Krepinevich), an irregular warfare framework will be presented that synchronizes six somewhat similar views of UW strategy into one consolidated, effective strategy.

In Martin Van Creveld’s *The Transformation of War*, he analyzes past and more recent wars (pre-1990) as well as the social, political, and economic reasons for waging war. To understand the future, he suggests one must study the past. Van Creveld demands that the military mindset be changed (transformed) to truly reflect the way the U.S. will wage future wars. His 1991 summation that “conventional war may be at its last gasp”<sup>36</sup> is backed up with his prediction of future warfare where “no man, woman and child alive today will be spared the consequences of the newly emerging forms of

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<sup>34</sup> Lt. Gen. Sir Gerald Templer, the British High Commissioner to Malaya. As cited in David Ochmanek. “Military Operations Against Terrorist Groups Abroad.” RAND. Santa Monica, CA. 2003.

<sup>35</sup> *The Sociology and Psychology of Terrorism: Who Becomes a Terrorist and Why?* A Report Prepared under an Interagency Agreement by the Federal Research Division, Library of Congress. September 1999. p.68.

<sup>36</sup> Martin Van Creveld (1991), *The Transformation of War*, The Free Press: New York: p. 205.

war.”<sup>37</sup> And those nations that refuse to look at war in the face and essentially adapt, transform and prepare for the future ways of war will simply fail to exist. Van Creveld’s guidance is clear: if irregular warfare is in fact the next generation of warfare, then military units must be organized, trained, and equipped to fight this style of warfare. To understand how to counter these tactics and the motivating factors behind irregular warfare, a closer look into Nathan Leites’ and Charles Wolf’s analysis will prove beneficial.

### **1. Case Study I – Nathan Leites and Charles Wolf – “Insurgent Conflicts”**

Nathan Leites and Charles Wolf published an essay on insurgent conflicts with RAND in 1970 that, although it appears dated, can be applied to today’s GWOT. Take for instance, Leites and Wolf’s explanation that it is the control of the population that is the constant struggle between the state and the rebellion and he who “owns the population and can manipulate their actions will win.”<sup>38</sup> Intent, opportunity and capability all lead to the rebellion’s credibility and much of that grows from the constant contact with the population. The rebellion (insurgency) depends more on “staying power” or protracted warfare like the Viet Cong in Vietnam rather than firepower (conventional), endurance and attrition rather than traditional victory.<sup>39</sup> A good rebellion must resist the temptation to “go conventional” for if they do, they no longer possess 1) either the “information advantage” of attacking what they can see (large, conventional footprint or support bases) or 2) the state of being a “population ghost” (that is, to blend in with the population and go virtually unnoticed by state or coalition forces). However, when a rebellion feels that it can go conventional and defeat the government, the government can often times be surprised if they are ill-prepared to handle the rebellion. For instance, the North Vietnamese Army (NVA) and Viet Cong (VC) conventional offensives in 1968 were highly effectively undertaken. The political consequences were

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<sup>37</sup> Martin Van Creveld (1991), *The Transformation of War*, The Free Press: New York: p. 223.

<sup>38</sup> Leites and Wolf (1970). “Rebellion and Authority: An Analytical Essay on Insurgent Conflicts”. RAND, R-462-ARPA.

<sup>39</sup> Ibid, p. 152.

catastrophic for the United States. Even the Chechens in 1996 displayed the courage and firepower to go conventional and won – driving the Russians out of their controlled territory.

According to Leites and Wolf, the protection of the population by the state must become their #1 priority!<sup>40</sup> The types of force and the types of political actions that are most relevant in determining outcomes are likely to differ significantly from counterinsurgency and other types of war. The mere killing of insurgents, without simultaneous destruction, of their infrastructure, is a waste of effort because all casualties will be made good by new recruits. However, attracting defectors or obtaining information that enables key figures in the rebellion movement to be seized or eliminated (infrastructure losses) may be both more important and more feasible in counterinsurgency than in conventional conflicts. Key counters in an insurgency are that the authority (state) must possess the capabilities of mobility, reconnaissance, police (rather than military) intelligence (which gains critical human intelligence and police-type intelligence networks), a capacity for operating effectively in small unit, and police and paramilitary forces. These are the most important military elements for deterring or meeting the threat of the rebellion. These same elements can be applied to well-trained security forces operating inside the area of influence. Furthermore,

- The organization of the rebellion and its' interface with the population, is the crucial target for the state's military and political efforts – not the rebellion's forces themselves, or the transient territorial base from which they operate.<sup>41</sup>
- Without more effective information and intelligence capabilities – indeed, without more effective capabilities for dealing with the rebellion and subversion in general – authorities that are genuinely disposed toward freedom and progress can still be destroyed by oppressive rebellions...the democratic, conventional approach to counterinsurgency will always be susceptible to further rebellion and subversion and can still be destroyed.<sup>42</sup>

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<sup>40</sup> Leites and Wolf, 1970, p. 154.

<sup>41</sup> Ibid, p. 154.

<sup>42</sup> Ibid, p. 158

- In the initial stages of an internal war, the insurgents possess an immense advantage with regard to the uncommitted mass of citizens. Their ability to influence public support for their cause is the lifeblood of their existence.<sup>43</sup>

SUMMARY: Leites and Wolf offer up several critical elements to counter rebellions:

1) It is a constant struggle between the state and the rebellion and he who “owns the population and can manipulate their actions will win; 2) protection of the population by the state must become their #1 priority; 3) obtaining information that enables key figures in the rebellion movement to be seized or eliminated (infrastructure losses) may be both more important and more feasible in counterinsurgency than in conventional conflicts; and 4) the state must possess the capabilities of mobility, reconnaissance, police (rather than military) intelligence (which gains critical human intelligence and police-type intelligence networks), a capacity for operating effectively in small unit, and police and paramilitary forces. These are the most important military elements for deterring or meeting the threat of the rebellion. Today’s security forces missions mimic these very actions and key counters however, due to Cold War doctrine and policy, security forces are forced to operate “inside the wire” of the air base to protect and defense personnel and resources. This lack of doctrine and policy is the single most important obstacle security forces must overcome to produce a more robust and capable air base defense force.

Below are two examples where actionable intelligence (HUMINT) led to the arrest of several senior Al Qaeda (AQ) operatives during police or intelligence operations by allied law enforcement services. The most prominent of such captures was the arrest of senior Al Qaeda operative Khalid Shaykh Mohammad by Pakistani officers, reportedly working with U.S. intelligence, in March 2003. Some might argue that the arrest of Khalid Shaykh — the organization’s most senior terrorist planner and the reputed

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<sup>43</sup> These three paragraphs provide the critical targeting elements in UW. Additionally, Leites and Wolf recognize the need for police type intelligence or human intelligence at the local level. It is only when security forces begin to gain HUMINT at the tactical level will more advanced intelligence collection platforms (C4ISR) provide additional capabilities. This integration is what today’s military planners call “Enhanced Situational Awareness” or “battle space dominance.”

architect of the September 11 attacks — damaged Al Qaeda’s operating ability more than any air strike against any other Al Qaeda leader.<sup>44</sup> Another senior operative, reputed to be Khalid Shayk’s replacement, Abu Faraj al-Libi, was captured in a small town (Mardan) about 70 miles northwest of Pakistan’s capital, Islamabad, in March 2005.<sup>45</sup> Despite the fact that the Al Qaeda network and its radical Islamism continues to roll on, this type of intelligence and strike template needs to become a standard for finding, fixing, capturing, or killing high-value AQ targets.

## **2. Case Study II - Philippines – 1946-1954**

In Larry Cable’s book, Conflict of Myth: The Development of American Counterinsurgency Doctrine and the Vietnam War, he critically analyzes the insurgency that existed between 1946 and 1954 against the Philippine government. For centuries, peasants were the victims of bitter oppression by feudal landlordism.<sup>46</sup> In an effort to protect their limited lands from Japanese invaders in the early 1940s, the Huks pledged their support under the Philippine Communist Party whose sole aim was the establishment of a communist regime in the Philippines as soon as U.S. forces had completed the liberation and were preparing for the final invasion of the Japanese home islands.<sup>47</sup> Known as the Huk insurrection, the Philippine Secretary of Defense, Ramon Magsaysay, clearly understood the insurgents’ goals and motivations. Magsaysay developed counterinsurgency goals that first, restored the population’s trust in the efficiency and fairness of the Philippine Armed Forces (PAF). Magsaysay limited the use of terror tactics, corruption and incompetence through summary discharges, court-martials while field promoting deserving soldiers; increased regular army pay and rations through the aid of the U.S. while boosting the morale of both soldier and peasant

dedicated to fight the Huks. Second, he demonstrated to the peasant population of the contested regions that the national government had both the will and the capability to maintain a protective presence – that is to provide the security that is required to build

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<sup>44</sup> Christopher Bolkcom Kenneth Katzman “Military Aviation: Issues and Options for Combating Terrorism and Counterinsurgency.” CSR Report for Congress, January 27, 2006: CRS-9.

<sup>45</sup> Ibid, CRS-9.

<sup>46</sup> Cable, 1995, p.45.

<sup>47</sup> Ibid, p. 46.



trust and earn peasant support.<sup>48</sup> The PAF encouraged the development of local self-defense forces while demonstrating the procedures for which citizens could use the PAF Judge Advocate General (JAG) office to prosecute thugs. Simultaneously, positive perceptions of the PAF quickly emerged with the critical timing and introduction of military medical, engineering, transport, and manpower resources for civilian projects. These efforts solidified public support and positive opinion towards the Philippine government while detracting support from the Huks.

Successful TTPs include improved intelligence gathering regarding civilians and captured Huk insurgents. Magsaysay understood insurgent tactics and was convinced that large sweeps were unnecessary and expensive. Instead, he wanted to enhance mobility and flexibility in deployment through reconnaissance, patrolling and night operations. These additional security measures ensured near round-the-clock protection of the peasants by the PAF and the growing support of peasants led to a severe schism in the Huk insurrection and Huk base camps dwindled as did public support. Magsaysay had successfully reversed public opinion through strong combined civil affairs/psychological operations (PSYOPS) campaigns that significantly contributed to a successful counterinsurgency. Unfortunately during this period, American COIN strategy failed to adopt any of Magsaysay's successes.

Summary: Larry Cable offers these specific tactics, techniques, and procedures that enabled the Philippine Secretary of Defense, Ramon Magsaysay to suppress and defeat the Huk insurrection:

- 1) Magsaysay developed counterinsurgency goals that first, restored the population's trust in the efficiency and fairness of the Philippine Armed Forces (PAF);
- 2) He demonstrated to the peasant population of the contested regions that the national government had both the will and the capability to maintain a protective;
- 3) Instituted strong combined civil affairs/psychological operations (PSYOPS) campaigns that enhanced security operations and significantly contributed to a successful

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<sup>48</sup> Another critical aspect for winning UW campaigns – building the trust of the population by providing a constant security presence and through an incentive program. Law and order patrols must be in constant contact with the population and when possible, live within the population. It sends a clear message to locals that you value your life as much as theirs and that the TTPs you are teaching their security forces will work since you are putting your life in their hands.

counterinsurgency; 4) encouraged the development of local self-defense forces while demonstrating the procedures for which citizens could use the PAF Judge Advocate General (JAG) office to prosecute thugs; 5) Magsaysay wanted to enhance mobility and flexibility in deployment through reconnaissance, patrolling and night operations that ensured near round-the-clock protection of the peasants by the PAF.

### **3. Case Study III - The “Malaya Model” of Counterinsurgency**

Robert Komer’s 1972 RAND study, entitled The Malayan Emergency in Retrospect focuses on the tactical/operational level themes is an exceptional view. He analyzed and exposed integrated tactics, techniques, and procedures from the various agencies that contributed to the successful counterinsurgency in Malaya. Essentially, United Kingdom (UK)/Government of Malaya (GOM) officials clearly understood that the key to defeating the insurgency was that the problems had to be solved at the local level. “A wide range of civilian and military programs were tied together under a unified management into a successful counterinsurgency (COIN) strategy.”<sup>49</sup>

The UK/GOM employed a mixed strategy encompassing civil, police, military, and psychological warfare programs, all within the context of a firm rule of law and steady progress toward self-government and independence. They secured the population by military means through destroying supply lines and cutting off recruits to the guerillas thus forcing them from the safety of their support bases and “into the open.”

By creating clear, concise rules of engagement (ROE) policies, it legitimized the military and police force’s use of force. Fair and consistent, this use of force model ensured officials that when the use of force was implemented, it was viewed by the public as legitimate and necessary. This further disconnected the population from the insurgents while promoting trust between the people and the police/military.

The UK/GOM officials developed a police intelligence gathering system whose foundation centered upon the constant contact with the population. This system became the “eyes and ears” of the COIN strategy thus bringing credence to such modern military terms used today as “enhanced situational awareness” and “battle space awareness.”

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<sup>49</sup> Komer’s analysis of the success of the UK/GOM officials is clear. The “right” mix of military involvement directed by state officials under one commander (centralized control, decentralized execution) proved invaluable while synergized strategies focused on shaping the population, earning their trust and support. Robert W. Komer, The Malayan Emergency in Retrospect R-0957, RAND, Santa Monica, 1972.

Training remote villages to provide their own security force capable of repelling insurgent attacks was a huge success. It allowed police forces to assemble platoon-sized “jungle squads” to pursue the guerrillas being pushed out of the villages. The re-establishment of the Malayan Special Branch for intelligence gathering under the Deputy Commissioner for Police deemed positive but still lacked the results that UK/GOM officials needed to improve their COIN strategy. Sir Gerald Templer gave intelligence his # 1 priority and created a separate branch solely responsible for the processing and analysis of battlefield information. The U.S. Military piggybacked with the police units and provided additional intelligence support. By maintaining the centralization of analysis efforts by the Special Branch, Templer was able to produce more efficient and actionable intelligence/counterintelligence. The special branch had the advantage over military units in that they lived in the country, spoke the language and knew the people. A critical tactic of the Special Branch was their utilization of captured or defected insurgents. Specifically, they would exploit them for intelligence and psychological operations. Several insurgents turned against their fellow insurgents and became informants while many of the surrendered insurgents were utilized as interrogators or employed in the interrogation centers.<sup>50</sup>

Summary: Komer’s analysis offers proven successful TTPs the United Kingdom and Government of Malaya implemented to defeat the insurgency:

1) They clearly understood that the key to defeating the insurgency was that the problems had to be solved at the local level; 2) the employment of a mixed strategy encompassing civil, police, military, and psychological warfare programs, firm rule of law and steady progress toward self-government and independence; 3) They secured the population by military means through destroying supply lines and cutting off recruits to the guerillas thus forcing them from the safety of their support bases and into the open; 4) Training remote villages to provide their own security force capable of repelling insurgent attacks was a huge success; 5) By maintaining the centralization of intelligence analysis efforts by the Special Branch, Templer was able to produce more efficient and actionable intelligence/counterintelligence. For air base defense purposes in

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<sup>50</sup> For more information, read Robert W. Komer’s The Malayan Emergency in Retrospect, The “Malaya Model” of Counterinsurgency R-0957, RAND, Santa Monica, 1972.

irregular warfare campaigns, The Malayan Model of counterinsurgency provided the focus at the tactical level or in this case the local level. Since air base defense is conducted at this level, it is a perfect transition into re-writing air base defense policy and doctrine.

#### **4. Case Study IV - A Vietnam Retrospective: Two Views**

Despite the fact that Vietnam was a complete disaster through the eyes of the American people as well as many defense planners, several critical elements of counterinsurgency doctrine still have validity in today's low irregular warfare operations in Iraq and Afghanistan and therefore require mention. Andrew Krepinevich's counterinsurgency strategies are the cornerstone of Professor McCormick's Mystic Diamond COIN strategy. McCormick's five (5) "universal truths" when establishing effective population control in COIN strategies that are integral in understanding how to operationalize/organize are:

- 1) Understand the population, that is, understand that the affected population is highly distributed;
- 2) Control of the population must be 'continuous' not intermittent;
- 3) Control must be maintained at the grassroots problem; that is, as Komer stated earlier, at the local level;
- 4) The legitimate actions of a COIN must be implemented from the bottom-up versus top-down – distributed, local authority;
- 5) All efforts in a COIN must be done by, with, and through the local population.<sup>51</sup>

Krepinevich outlines contemporary insurgencies into three distinct phases: "first, insurgent agitation and proselytization among the masses – the phase of contention; second, overt violence, guerilla operations, and the establishment of bases – the equilibrium phase; and third, the open warfare between insurgent and government forces designed to topple the existing regime – the counteroffensive phase."<sup>52</sup> Krepinevich

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<sup>51</sup> Class notes, August 2005, Professor McCormick, "Seminar In Guerilla Warfare," Naval Postgraduate School, Monterey, CA; and Andrew F. Krepinevich, Jr., The Army and Vietnam: Two Views, Baltimore, John Hopkins University Press, 1986.

<sup>52</sup> Krepinevich footnoted these three phases from General Vo-Nguyen Giap, *People's War, People's Army*. New York: Frederick A. Praeger, 1962, p. 46-47.

then begins to analyze in more detail the three phases - see pages 7-8 and develops counterstrategies that have been adopted by other successful counterinsurgency operations. Specifically, he says that:

...the people are the foundation upon which that strength (insurgent strength) is built. Since the insurgency is initially too weak to openly challenge the government, he must pursue an indirect approach. The target of that approach is the population. If the insurgent can gain control over the population through fear, popular appeal, or, more likely, a mixture of both, he will win the war. He will win because the support of the people, be it willing or unwilling, will provide him with manpower for his guerilla units, the food, medicine, and shelter to support them, and the intelligence on government forces necessary to his safety. At the same time, the inability of the government to control the people will sap away its strength...<sup>53</sup>

By integrating the specific TTPs mentioned in the four case studies above, critical elements, including central themes, present them as an effective counterinsurgency strategy. Additionally, these case studies provide the basic framework in answering the 60-year-old problem of air base defense. In Table 2, the critical elements of counterinsurgency are depicted from the four case studies while the “X” denotes specific TTPs or central themes each author discussed as being critical to the COIN fight.

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<sup>53</sup> Krepinevich, 1986, p. 8. He further discusses counter strategies for defeating the insurgents’ three phases of battle. See table 2 that addresses the critical elements of COIN – see pages 10-16 in Krepinevich for a complete counter insurgency discussion.

<b>Critical Elements of Counterinsurgency</b>	<b>Insurgent Conflicts</b>	<b>Philippines</b>	<b>Malaya</b>	<b>Vietnam</b>
<b>Control/security of the population</b>	X	X	X	X
<b>Target rebellions' relationship w/ population</b>	X		X	X
<b>Destroy insurgent infrastructure</b>	X			X
<b>Mobility of ground forces</b>	X	X	X	X
<b>Reconnaissance patrols</b>	X	X	X	X
<b>Operate in small units</b>	X			X
<b>Police-type intelligence</b>	X	X	X	X
<b>Restore population's trust in HN security</b>		X	X	X
<b>Strong civil affairs/PSYOPs campaigns</b>		X	X	
<b>Build trust/earn population support</b>		X	X	X

Table 2 Critical Elements of Counterinsurgency

From this table, the critical elements of a COIN strategy based on these historical case studies of irregular warfare campaigns emerge. From Table 2 above, five distinct phases or counter strategies arise as the major elements in a COIN strategy. These five phases are: building a relationship with the population (population control), destroying the insurgent infrastructure, destroying the remaining insurgent forces, destroying the relationship between external support (international community) and the insurgency, and lastly, building relationships with the external support.<sup>54</sup>

Just as conventional theorists and strategists have embraced the Clausewitzian perspective for identifying enemy centers of gravity (COGs), so too have the various authors mentioned above. In fact, irregular warfare strategists must adopt similar strategies as their conventional counterparts. For example, in planning a conventional air battle, Colonel John Warden's 5 Circles of Attack (COG identification) materialized in the late fall of 1988, and his model was developed in the form of five concentric rings—an Air Force targeting bull's-eye so to speak.<sup>55</sup> Analyzing the enemy as a system, Warden contends that all strategic entities can be broken down into five component parts.<sup>56</sup> The most crucial element of the system, the innermost ring, is leadership. Extending outward from the leadership center, in descending importance to the overall functioning of the system, are the rings of organic essentials, infrastructure, population, and fielded forces.

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<sup>54</sup> Class notes, Professor McCormick's "Seminar in Guerilla Warfare", August 2005, Naval Postgraduate School, Monterey, California.

<sup>55</sup> Major David Fadok, "John Boyd and John Warden: Airpower's Quest for Strategic Paralysis"; Air University Press: February 1995, Maxwell Air Force Base, Alabama, p. 24-25.

<sup>56</sup> Ibid, p. 25.

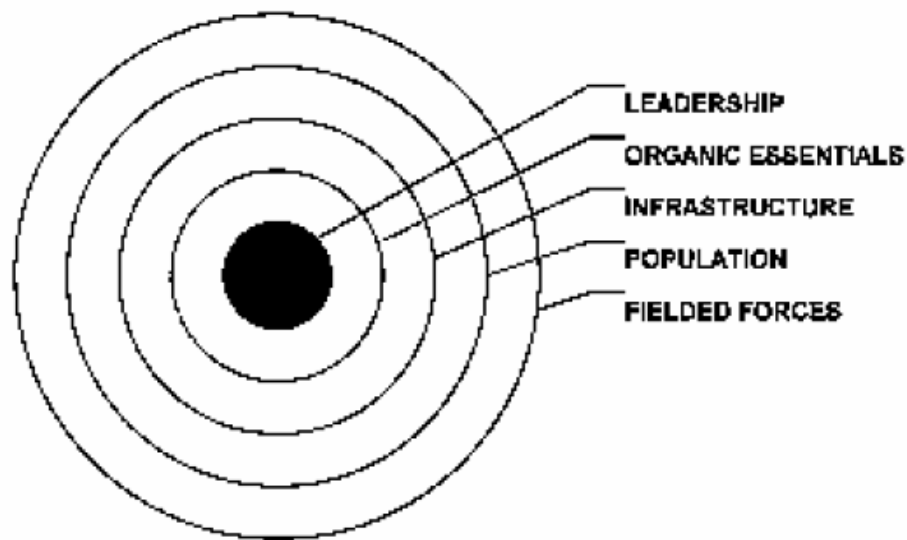


Figure 6 Warden's Five Strategic Rings <sup>57</sup>

Using the data from Table 2, a similar comparison and targeting bulls-eye for irregular warfare centers of gravity (COGs) can be developed. The results of combining the data from Table 2 with Warden's conventional model for targeting enemy COGs is captured in Figure 7 below. This is an example of how air base defense strategists and planners must learn to "operationalize" their irregular warfare strategy against these specific centers of gravity. These COGs are the cornerstone for ABD planning and the integration of COIN operations.

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<sup>57</sup> Major David Fadok, "John Boyd and John Warden: Airpower's Quest for Strategic Paralysis"; 1995, p. 25.



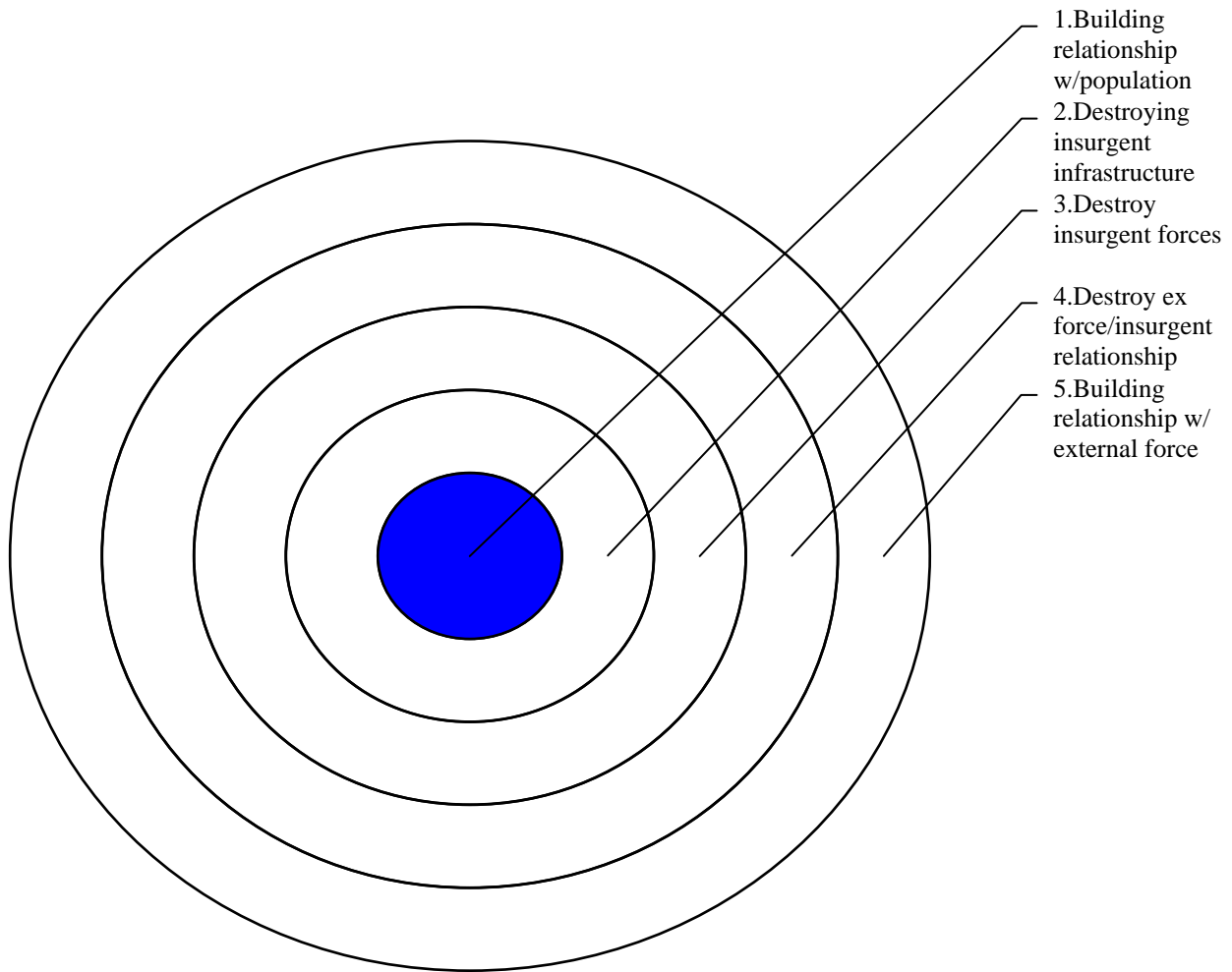


Figure 7 Targeting Irregular Warfare Centers of Gravity

In Figure 7, there are five distinct centers of gravity in irregular warfare that both the state and in this case, the insurgents share. However, for this thesis, the assumption will be made that no external force (international community) is present therefore limiting the irregular warfare strategy to three essential strategies: 1) building a relationship with the local population; 2) destroying enemy infrastructure; and 3) destroy enemy forces.<sup>58</sup> The same strategy exists for the insurgency, rebellion or guerillas only the state's infrastructure is the central target in strategy 2 and the state (forces) is the

<sup>58</sup> While Professor McCormick's model analyzes both an internal insurgency (the top half of the diamond) as well as the external or international community support to the insurgency (the bottom half of the diamond), this thesis focuses on the top half of the model since it falls in line with the three SF METs as well as the three IBD objectives. The bottom of the model deals with external support and is in Basilici and Simmons, "Transformation: A Bold Case for Irregular warfare," p. 33.

prime target in strategy 3. Below is an example of this model known as the “Mystic Diamond.” The lower half of this model summarizing the external support can be found in Basilici and Simmons’ thesis, “Transformation: A Bold Case for Unconventional Warfare.”

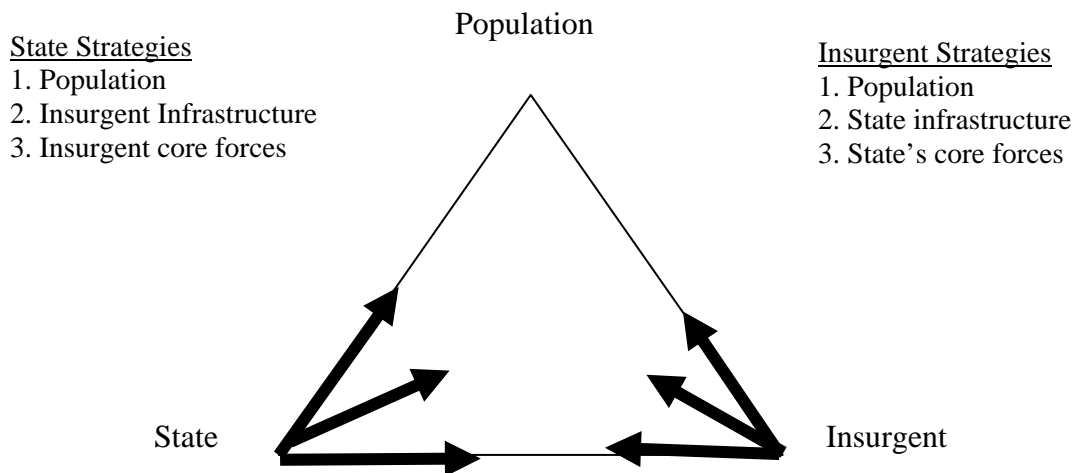


Figure 8 McCormick’s “Mystic Diamond” Model of Counterinsurgency Strategy<sup>59</sup>

Asymmetric conflict is in fact symmetric when fought properly!<sup>60</sup> Now that the foundation has been laid in understanding the three critical elements of an internal counterinsurgency strategy, a new framework for air base defense needs to be articulated so previous base defense doctrine can be updated to counter today’s true irregular threat that has plagued the United States military for the past sixty years.

SUMMARY: The third chapter discussed four case studies involving critical elements of numerous irregular warfare campaigns including successful counterinsurgency (COIN) TTPs. From insurgent conflicts in general to rebellions, uprisings, and guerilla warfare in Malaya, the Philippines, and Vietnam, critical elements of successful counterinsurgency campaigns were highlighted. Fundamental TTPs serve as the foundation for executing the three critical phases of a COIN strategy known as the

<sup>59</sup> Gordon McCormick, “Guerrilla Warfare,” (notes from presentation, Department of Defense Analysis, Naval Postgraduate School, September 2005).

<sup>60</sup> Ibid

“Mystic Diamond” – a strategy that today’s security forces must also adopt in their ABD planning. These proven principles provide “the ways” to conduct irregular warfare campaigns within the area of influence. Also extracted from these proven principles, just as conventional forces design and execute attacks against enemy centers of gravity (COGs) are irregular warfare COGs. These COGs are evolved directly from the three distinct phases of COIN strategy.

Chapter IV creates the new framework for air base defense by introducing a three-phased air base defense strategy for irregular warfare encompassing the ‘ways’ and ‘means’ of COIN operations and the air base defense Mission Essential Tasks that support the three critical integrated base defense objectives or the ‘ends’ of “See First”, “Understand First”, and “Act First.”

## **IV. A THREE-PHASED AIR BASE DEFENSE STRATEGY FOR IRREGULAR WARFARE**

After the fall of the Soviet Union, the United States military was left holding a compliance-based management style of dealing with its armed forces. The Strategic Air Command guidance under the iron fist of General Curtis LeMay ensured all personnel and resources adopted a checklist mentality with respect to work processes. A common saying during the Cold War days was “if it was not on the checklist, you did not do it!” became an overwhelming micro-management tool. This approach was implemented as methods to not only manage the enormous number of personnel but it transferred over into written guidance in the management of costly physical security systems. This approach has been identified by the Air Force as the old way of conducting business. The Air Force realizes with the constant downsizing and force shaping of its personnel, that the smaller, lighter, more expeditionary force must quickly become a capabilities-based force.<sup>61</sup> This capabilities-based approach is the new framework that is required to provide a solution to the sixty-year old problem of air base defense. The solution is found in tasks and objectives already defined by Air Force planners. The problem is that no tactical guidance integrates these concepts into an executable actionable air base defense strategy, especially for IW campaigns. This chapter will combine the three current Security Forces Mission Essential Tasks (METs) with the three phases of COIN strategy developed in chapter three and deliver an air base defense strategy that more clearly defines the Air Force’s three key Integrated Base Defense (IBD) objectives of “See First, Understand First, and Act First.”

In February 2005, the Air Force published the Capability Development Document (CDD) for Integrated Base Defense Security Systems (IBDSS) that lists the capabilities required to protect air base assets, drawing upon lessons learned from past events, in the context of present realities and future circumstances. Not only does the CDD provide the construct for future operations but it also recognizes that “emergent needs demand an accelerated effort to adopt the integrated base defense mindset and incorporate advanced

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<sup>61</sup> The foundation of this QDR is the National Defense Strategy, published in March 2005. This strategy calls for continuing to reorient the Department’s capabilities to address a wider range of challenges.

technology into our tactics, techniques, and procedures (TTPs).”<sup>62</sup> The compliance-based approach of defending air bases rarely discussed specific TTPs to effectively deter, delay, deny and defeat the enemy (known as the “4Ds”). No methodology existed to substantiate or validate the use of specific TTPs that could counter enemy attacks.

Through a process known as the Systems Effectiveness Assessment (SEA), the Air Force has begun to validate the effectiveness of current, antiquated, compliance-based systems. This process uses a systems security engineering (SSE) approach based on risk, consequence, and performance. It identifies the effectiveness of existing and conceptual systems, identifies the risk to resources, and uses modeling and simulation to evaluate the security system. The SEA process is multifunctional in nature, evaluating not just Security Forces but all organizations that play a role in the Integrated Base Defense (IBD) plan by identifying system weaknesses and providing leaders with validated quantifiable data, facilitating effective risk management decisions.<sup>63</sup> Not only has the Air Force taken a firm stance on weighing the costs, risks, and benefits of funding new technologies designed around a capabilities-based system, they need to evaluate their security forces capabilities in the same manner.

If Air Force Security Forces are indeed going through a transformation as mentioned in Chapter II and will be conducting security operations “outside the wire” then there are three critical air base defense Mission Essential Tasks that must be followed. These three ABD METs are 1) tactical ISR; 2) intercepting the threat; and 3) application of force.<sup>64</sup>

#### **A. SIZE ADVANTAGE – INFORMATION DISADVANTAGE IN IRREGULAR WARFARE**

Because insurgents attempt to prevent the conventional military battle space from becoming decisive and concentrate in the political and psychological, operational design must be different than for conventional combat. Specifically, the U.S. military and other government agencies should develop an effects-based approach designed to fracture,

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<sup>62</sup> Capability Development Document for Integrated Base Defense Security Systems. Increment: I, ACAT III. February 17, 2005. Validation Authority: AF/XOR; p. ii.

<sup>63</sup> Air Force Tactics, Techniques, and Procedures 3-10.1; 20 August 2004: p. 6.

<sup>64</sup> Per discussion with BG Holmes after CORONA December 2004. He spoke of these 3 METs but the author has found nothing official so for this thesis, these 3 METs become the cornerstone for air base defense planning in irregular warfare.

delegitimize, delink, demoralize, and deresource insurgents.<sup>65</sup> Conventional forces have a size advantage over the irregular forces that is they are usually larger in number and generally better equipped. However their primary debilitating factor is that they are trained in the conventional mindset of warfare not the guerrilla or insurgent mindset. Conventional TTPs revolve around attrition warfare and destroying enemy centers of gravity as discussed in Warden's Five Strategic Rings in chapter three. The thought that "any good soldier can handle guerillas" is exactly the failed strategic mindset the armed forces must not embrace when faced with irregular warfare.<sup>66</sup> The insurgents possess an information advantage over conventional forces; that is they can see the large footprint of the conventional forces that occupy strategic locations like forward deployed air bases throughout Iraq and Afghanistan. The insurgents therefore can hit or target what they can see. Conventional forces are therefore at an information disadvantage as the insurgents take refuge in the population and assimilate. Conventional forces cannot target what they cannot see - meaning that without infiltrating or otherwise co-opting the population or providing a constant security presence that cannot gather the necessary human intelligence required to target the insurgents' infrastructure and personnel. Whichever agency overcomes its disadvantage first, wins! The most direct way to defeat an insurgency (IW campaign) is to attack them indirectly.<sup>67</sup> The 2006 *QDR* IW Study supports this premise. It claims that U.S. forces in Iraq were relatively isolated from the population they existed to support: 'they live in fortified camps away from the population and most face-to-face contact...is during cordon and search or vehicle search checkpoint operations.<sup>68</sup> Routine foot patrolling, a key means of interacting and thus gathering Human Intelligence (HUMINT), was the exception.<sup>69</sup>

One of the Air Force solutions to ensure its' ability to conduct rapid and precise operations to achieve decisive results is through establishing three key objectives that are

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<sup>65</sup> Metz/Millen Nov 2004, p. 7.

<sup>66</sup> Andrew F. Krepinevich, Jr., The Army and Vietnam, Baltimore, John Hopkins University Press, 1986; p. 37.

<sup>67</sup> Class Notes, Professor McCormick's Seminar in Guerilla Warfare. Naval Post Graduate School, Monterey, California: August 2005.

<sup>68</sup> Brigadier Nigel Aylwin-Foster, British Army, "Changing the Army for Counterinsurgency Operations" Military Review: Nov-Dec 2005: p. 6.

<sup>69</sup> Ibid, p. 6.

the cornerstone that guide IBD forces seeking to dominate the battle space: *See First, Understand First, and Act First*.<sup>70</sup> The Air Force's stated goal in implementing these three objectives is clear: *Protect, defend, and fight to enable Air Force global vigilance, reach and power*.<sup>71</sup> However, by overlapping the air base defense Mission Essential Tasks of *Tactical Intelligence, Surveillance, and Reconnaissance* (ISR), *Intercepting Threats*, and *Application of Force* with the three core IBD objectives and specifically applying them to the three distinct phases of counterinsurgency operations, a rather simple explanation of how tactical level air base defense operations in IW can be executed. In the figure below, each Phase of the new air base defense strategy for irregular warfare is thoroughly explained.

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<sup>70</sup> AFTTP 3-10.1, dtd August 20 2004; p.11.

<sup>71</sup> AF/XOS-F. "USAF Security Forces Transformation Strategic Plan" (Draft). Figure 1 – Security Force relevance to Air Force Strategic Planning and Concepts of Operation, and p. 12.

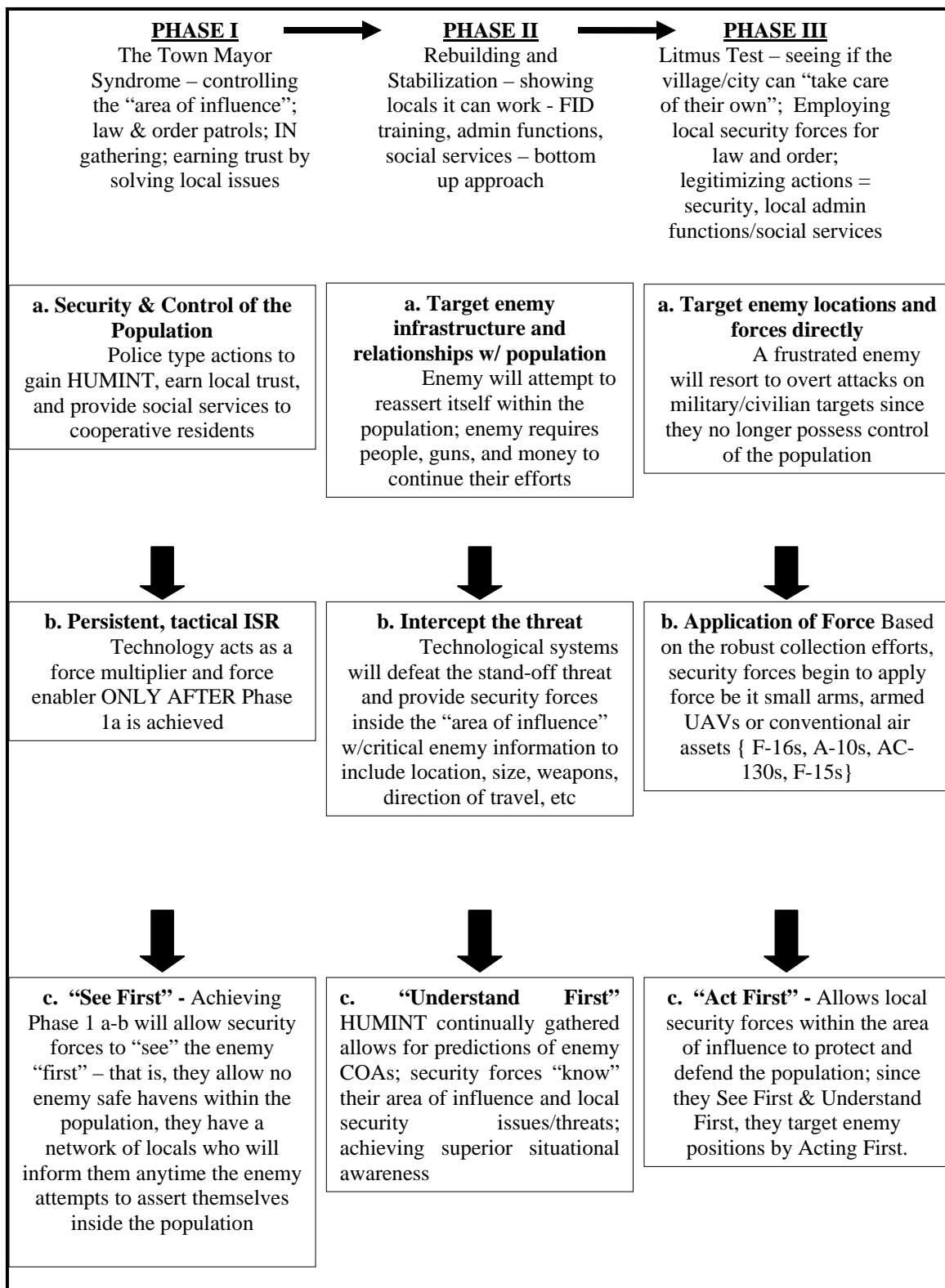


Figure 9 The Three Phases of ABD in IW Operations



## **1. Phase I – The Town Mayor Syndrome**

### ***a. Control/Secure the Population***

a) Establish security at the local level. This is the top priority. This will lead to relationship building between security forces and the local population. Earning their trust is critical. Incentive programs will work well using integrated Civil Affairs and Psychological operations (PSYOPs) strategies. All strategies must be focused on the ground commander's ability to protect and defend the population which will earn the trust of the population. Air Tasking Orders should be developed that complement the ground commanders IW strategy. All other agencies are supporting the ground commander in IW campaigns unlike the conventional command and control set-up that exists today in Iraq.<sup>72</sup>

b) Well-trained ground forces educated in irregular & counterinsurgency strategies must be deployed at the tactical level. Based on the critical elements of COIN, police units work best when properly trained and educated because so many of the missions they perform revolve around law and order patrols.

c) Implement police-type intelligence cells or military counterintelligence specialists trained with the deployed security forces. Human intelligence gained from the population is vital in determining location, size, and support of enemy forces.

### ***b. Tactical ISR***

a) Exploit the technological advantage over the enemy. Persistent ISR keeps the ground commander apprised of enemy locations and movements. For example, in the counter guerrilla fight, the threat is not ballistic missiles but rockets, mortars, RPGs, and MANPADS. According to Thomas Searle, an author who submitted an article titled "Making Airpower Effective against Guerrillas" for Air Space Power Journal, "We need to bring our space-based concept down to the counter guerrilla level by deploying

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<sup>72</sup> During conventional campaigns, the Air Operations Center (AOC) is the heart of the command and control system. All agencies support the AOC. However, in IW campaigns, the ground commander has the responsibility of determining enemy COAs as well as friendly COAs. This topic could be a thesis by itself but it is important to note that the hub of the C2 system is the Base Defense Operations Center (as defined in Air Force TTPS 3-10.1) and the various "spokes" – supporting agencies – surround the hub and provide those capabilities that aid the ground commander in achieving the three distinct ABD phases of IW.

persistent aerial ISR platforms that provide similar wide-area coverage focused on the specific signatures of these weapons.”<sup>73</sup>

b) Redirect the manpower savings from the capabilities-based security systems deployed defensively at the air base into the “area of influence.”

c) Integrate tactical ISR, security forces, and actionable intelligence into a common operating picture. Ground forces receive real-time data links/information on enemy stand-off attack locations as well as live feeds from ISR assets.

d) Allows for battle space dominance to truly “See” the enemy “First”.

e) ISR platforms are employed to track enemy movement and allow security forces to intercept the threat or apply force and neutralize the targets. Once population control is achieved, attacking enemy centers of gravity (support and infrastructure) as well as enemy forces should be the natural process in IW warfare. Despite the fact that very little information is available regarding U.S. airpower and its role in fighting irregular warfare forces, the Air Force is making major changes to the way it fights.<sup>74</sup> In a March 2004 testimony to the House Armed Services Committee, the air boss for Central Command (CENTCOM), Lieutenant General Walter Buchanan III, 9<sup>th</sup> Air Force Commander (9 AF/CC), testified that “As the air commander, my primary concern is the effect airpower has on the battlefield in support of CENTCOM’s mission and our ground force. If I can achieve a particular effect with F-16’s with LITENING Pods, then I’ll task them. If a Predator UAV is the appropriate vehicle, I’ll task it. The bottom line is to create an effect that supports the war fighter and his mission...and keeps him safe.”<sup>75</sup> The Air Force is stepping out on the applications of air power against irregular warfare or non-state actors using any viable means necessary. One approach to decentralizing air operations against non-state actors, particularly in the area of close air

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<sup>73</sup> Thomas R. Searle. “Making Airpower Effective against Guerrillas.” *Air & Space Power Journal*. Fall 2004.

<sup>74</sup> This under-focus on employing airpower against non-state actors is not a conscious decision, but caused by a fundamental shortfall in airpower training, doctrine, planning, and strategy. As a point of reference, the Air Force’s primary doctrine document guiding actions against non-state actors contains less than two pages on combating terrorism. *Military Operations Other Than War*. Air Force Doctrine Document 2-3. July 3 2000. p.16-17.

<sup>75</sup> 9 AF/CC Lt Gen Walter Buchanan III Testimony during the House Armed Services Committee United States House Of Representatives Subcommittee On Tactical Air And Land Forces Regarding Unmanned Combat Air Vehicle (UCAV) And Unmanned Aerial Vehicle (UAV) March 17 2004.

support (CAS) would be to coordinate air and ground forces at lower levels of organization than is currently practiced. Coordination at lower levels can take place both within and between Services.<sup>76</sup> It is time that Air Force air assets are fully integrated with ground elements (a combination of security forces, forward air controllers or tactical air control parties) to provide this improved air/ground integration to defeat irregular warfare threats.

*c. See First*

a) Relentless Intelligence and Information Capture. Gather, collate and effectively disseminate information on defense related activity within and beyond the IBD battle space.

b) Detect and Identify Threats. Analyze collated information and determine likely threats. Maintain intelligence, surveillance, reconnaissance, and target acquisition capability.

c) Predict Threat Course of Actions (COA). Use planning tools to process information and deductions and arrive at likely threat COAs.<sup>77</sup>

d) By establishing security of the population at the tactical level, and by earning their trust, the insurgents will have nowhere to hide. They must seek refuge in other “areas of influence” to avoid being “seen”. Should insurgent attempts be made to return to the controlled “areas of influence”, the population should advise intelligence sources or ground forces of their location.

e) Ground commanders can implement strategy #2 and #3 of COIN operations. One way to provide an improved common operating picture of the battlefield in irregular warfare is through the integration of technological capabilities that aid the ground force commander. For instance, in a recent Air Force article, the exploitation of tactical C4ISR is being conducted on a daily basis throughout Iraq. Near Balad Air Base, Air Force assets like the E-8C Joint Surveillance and Target Acquisition Radar (JSTARS) surveys hundreds of miles of the country at a time, looking for insurgent activity. The JSTAR System mission has two parts. The first is to radio relay with convoys throughout

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<sup>76</sup> 9 AF/CC Lt Gen Walter Buchanan III Testimony during the House Armed Services Committee United States House Of Representatives Subcommittee On Tactical Air And Land Forces Regarding Unmanned Combat Air Vehicle (UCAV) And Unmanned Aerial Vehicle (UAV) March 17 2004.

<sup>77</sup> Air Force Tactics, Techniques, and Procedures (TTPs), 3-10.1, p. 11-12.

Iraq. Through radio and a text-messaging system, convoys can contact Joint STARS for help. Air National Guard Maj. Thomas Grabowski, senior director on the aircraft, deployed from Robins Air Force Base, Georgia said, “the Joint STARS is the 911 call for convoys on the ground. So if one of these convoys gets in trouble -- they break down, they have troops in contact, small-arms fire or any type of a problem -- they call us. We’re like the ‘On-Star’ for the ground commander.”<sup>78</sup> The second part of the mission is to deter insurgent activity on Iraq’s borders. Junior enlisted Airmen are in charge of the multimillion dollar radar attached to the bottom of the aircraft that zeros in on the enemy 100 to 200 miles away. Major Grabowski said the advanced system allows them to see the enemy without the enemy seeing them. “Think about where you live at home and then think of a place 125 miles from that location. If you were to move out of your driveway and we were orbiting 125 miles away, we would see you move. So it’s that advanced,” the major said. “While the Army and Marines are keeping in close contact with convoy commanders, I can then coordinate with the Joint STARS Air Force assets on the aircraft to direct air support either as a show of force or to take out the enemy,” he said.<sup>79</sup>

## **2. Phase II – Rebuilding & Stabilization**

### ***a. Target Enemy Infrastructure***

a) The enemy requires arms, money and personnel to fuel the insurgency. Once the population has been removed from the equation, the enemy must look elsewhere for the arms, money and personnel. Should the enemy attempt to return to the “area of influence” controlled by security forces, the effective CA/PSYOPs campaigns could be used in the “carrot and stick” approach to ensure the population reports any attempts of enemy infiltration into the community or else lose critical services such as fresh water, electricity and improved social services (health care and educational opportunities). Should the enemy actually re-establish connections within the “area of influence”, the “carrot and stick” approach could be applied to the entire community losing these services. On the contrary, additional services may be provided should the

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<sup>78</sup> SSgt Kevin Nichols, “Joint STARS keeping eye on the ground” Air Force Link article; accessed at <http://www.af.mil/news/story.asp?id=123016632>; retrieved on February 24 2006.

<sup>79</sup> Ibid

population report enemy contact within the community that stops an insurgent attack against U.S. forces, civilians, or the air base itself.

***b. Intercepting the Threat***

a) At the air base, allow a capabilities-based security system to counter the standoff attacks using Wide Area Detection (WAD), Remotely Operated Weapons (ROWs), Counter Mortar, Rocket, and Sniper systems. This defensive security posture provides a capability that current security systems fail to provide. In doing so, commanders intercept the threats to air bases and neutralize the enemy's ability to disrupt and delay critical operations on the air base. When the enemy can be seen, it makes their ability to conduct these attacks more difficult.

b) See First + tactical ISR allows commanders to find, fix, track and target, if necessary, enemy locations. Achieving battle space dominance allows ground commanders to intercept the threat that is to track and apprehend enemy forces after an attack or when detected in preparation for an attack.

***c. Understand First***

a) Identify Vulnerabilities. Critically assess the effectiveness of the defense that is in place. Aggressively examine the integrity of the defense, know the weaknesses that exist, and plan accordingly.

b) Know and Manage Risks. Where the burden of a shortfall exists in the defense, ensure that it is carried unobtrusively and in a manner that minimizes the risk to assets in priority order. To minimize risk, manage any shortfall commensurate with the emerging situation and changes in defense resources.<sup>80</sup>

c) "See First" allows intelligence experts and the ground force commander to understand the tactics, techniques and procedures of enemy forces. By removing the population from the enemy, their other courses of action are to implement strategies #2 and #3 of the Mystic Diamond – that is to target the relationship between the population and U.S. force and to target them directly. When insurgents are forced to overtly attack U.S. forces, they are now operating conventionally and no longer possess the information advantage and in fact are operating, in most cases, with a size disadvantage.

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<sup>80</sup> AFTTPs 3-10.1 August 20 2004 p.11.

### **3. Phase III – The Litmus Test**

#### ***a. Target the Enemy***

a) When the first two “means” have been achieved, the insurgency has nowhere to hide and therefore must either disband, dissolve or target U.S. forces directly. Anytime the enemy attempts to target forces overtly, they are now fighting in a conventional manner – which is the ‘bread and butter’ of how the U.S. armed forces conduct military operations.

b) Without a safe haven to operate, reconstitute, or re-supply themselves, the insurgents must avoid the controlled “areas of influence” making them vulnerable targets to well-integrated networked villages, towns, and cities.

c) Counterintelligence experts team up with Civil Affairs and PSYOPs Subject Matter Experts (SMEs) to begin to root out remaining pockets of insurgents through aggressive CA/PSYOPs campaigns within the tactical area of influence. Their collective information superiority is distributed and shared amongst the other networked “areas of influence” under the tight control of U.S. forces. This synergistic effect is also known as the oil spot method of counter insurgency where the three key strategies are executed and then duplicated in connecting towns, villages or cities to duplicate the effort. This area of interest from which insurgents could re-enter the area of influence may require key vehicle, personnel checkpoints, additional foot patrols, and heavy weapon positions, if applicable, covering likely avenues of approach.

#### ***b. Application of Force***

a) Battle space dominance allows ground commanders to develop COAs that enhance the security of the population while targeting and tracking enemy forces. For simple stand-off attacks, the defensive technological capabilities employed at the perimeter of the air bases can easily counter these threats. The information gained from these threats can be disseminated via data links to conventional aircraft, ground forces and command centers through a technological suite of networked command and control systems. Counter attacks by friendly forces are COAs that the ground commander has pre-established or can determine Just-In-Time as High Value Targets emerge. This requires all other agencies to serve in a supporting role to the ground commander’s IW strategy.

b) This application may be in the find, fix, track mode of gathering intelligence on support networks and enemy forces or it may in the find, fix, target, neutralize mode to eliminate HVTs or a high concentration of enemy forces. Off base areas deemed “hot” with enemy activity should have specific air assets dedicated for immediate employment (armed UAVs, attack helos, F-16s or F-15s) and if prior coordination and approval by the ground force commander to decentralize both security force responses and aircraft strike/counter strike missions. The ground force commander is responsible for the protection of all ground security forces and therefore all targeting information must be shared between the Base Defense Operations Center and other base command and control agencies top include attack data involving time, location, and type of weapon system employment (Remotely Operated Weapons Systems, armed UAVs, conventional aircraft, or close air support missions).

**c. Act First**

a) Decide First. Taking into account the advantages and disadvantages of each COA, the decision must be a logical result of the analysis process. The absence of ideal conditions, such as when defense forces are undermanned, does not preclude the selection of the best COA in the prevailing circumstances. Sometimes these circumstances are as simple as upgrading hand-held devices on the battlefield for better air-to-ground integration. As Lieutenant General Wooley, Commander, Air Force Special Operations Command (AFSOC) has stated, “a move away from voice only communications to ‘machine-to-machine’ data links may allow terminal air controllers to pass target coordinates directly from hand-held target designators to strike aircraft. Some assert that this improvement alone could reduce the required time to attack fleeting targets from an average of thirty minutes to less than five minutes.”<sup>81</sup> Imagine if you magnified this technological capability with the complete integration of a professional security force operating within the area of influence? Then one could possess what all commanders want in any kind of war and that is superior situational awareness or battlefield information dominance.

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<sup>81</sup> Lt.Gen. Michael W. Wooley. Commander, Air Force Special Operations Command. “Application of Special Operations Forces in the Global War on Terror.” *Air & Space Conference 2004*. Washington, DC. September 14 2004.

b) Act to Remove the Threat. Action to remove a threat could be the initiating of a lethal or non-lethal engagement at a time and place of the Air Force's choosing. Equally, amending the defense posture and thereby rendering ineffective an adversary's preferred line of attack constitutes acting to remove a threat.<sup>82</sup> A classic example of how police type intelligence or actionable human intelligence has aided commanders in the employment of armed ISR assets to find, fix, track, and destroy high value targets is probably the most widely noted air strike connected with the September 11 attacks. In November 2001, an armed U.S. "Predator" drone (MQ-1), supplemented by U.S. combat aircraft, killed Mohammad Atef, the number three leader of Al Qaeda behind Osama bin Laden and Ayman al-Zawahiri. His location was pinpointed when a Taliban defector (HUMINT) told U.S. Special Forces in Afghanistan where he would be and the site was surveyed by the circling Predator immediately before and after the strike.<sup>83</sup> Atef was allegedly responsible for planning anti-U.S. operations in Somalia in 1993 and possibly the two bombings of U.S. embassies in Kenya and Tanzania in August 1998.

Another example occurred on November 3, 2002, when an armed U.S. Predator drone killed Al Qaeda's leader in Yemen, Ali Qaed Sinan al-Harithi, and five other Al Qaeda suspects driving with him in a car. Harithi was a key suspect in the October 2002 bombing of the *U.S.S. Cole* in Aden harbor. The government of Yemen virtually admitted that it had provided information on Harithi's movements through the Yemeni desert to U.S. intelligence, enabling the successful Predator targeting and strike.<sup>84</sup> These types of actions should become routine for Air Force assets (air and ground forces). Why should the Air Force rely so heavily on other services (Army, Marine units) to conduct counterinsurgency operations when security forces are police professionals that also possess advanced infantry skills? The same is true for close air support (CAS) missions. Both the Army and Air Force share this dilemma of relying on individually trained specialists (Air Force forward air controllers (FACs) or tactical air

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<sup>82</sup> AFTTP 3-10.1 August 20 2004; p. 12.

<sup>83</sup> Bolkcom and Katzman, (2006), CRS-11 and Judith Miller and Eric Schmitt. "Unmanned Plane Tracks, Strikes Enemy; Predator Credited With Helping to Kill Top Bin Laden Aide." *New York Times News Service*, November 23 2001.

<sup>84</sup> Ibid, CRS-12.



control parties (TAC-Ps)) to bring air power to bear in ground operations. However, the Army is doing something about it. The Army is reportedly interested in increasing the training its artillery fire support officers receive, to enable them to also control aircraft. A joint force air controller program, with standardized training and procedures might be part of this process. According to some Army leaders “...the Army needs to be able to train its own soldiers to call in air strikes to supplement what the Air Force provides. ‘Having just one person with a critical skill in any direct-fire ground combat [unit] is a recipe for disaster.’”<sup>85</sup>

SUMMARY: In Chapter IV, the means of conducting air base defense with crucial C4ISR assets was examined. It introduced the three Air Force Security Forces Mission Essential Tasks as the key components or the “the means” of conducting IW campaigns – 1) tactical ISR; 2) intercepting the threat; 3) application of force. To link the “ways and means” together into a seamless air base defense strategy for IW, the IBD objectives of “See First, Understand First, and Act First” were presented as the “ends” for countering IW threats. Lastly, this chapter provided a three-phased ABD strategy integrating the ‘ends, ways, and means’ to deter, delay, deny and defeat IW forces on the battlefield.

In Chapter V, the concept of ‘swarming’ as the primary technique to synchronize both ground forces (quick reaction forces) and C4ISR platforms into an integrated, irregular warfare strategy will be introduced. Additionally, the advantages of swarming on the battlefield identify three key enablers – elusiveness, superior situational awareness, and standoff capabilities which are also consistent with the principles identified in the three-phased ABD strategy for IW: surprise, speed and maneuver, and efficiency of lethality.

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<sup>85</sup> Greg Jaffe. “Getting U.S. Forces Together Poses Challenge for War Plan.” *Wall Street Journal*. February 11 2003.

## V. INTEGRATED SWARMING OPERATIONS FOR AIR BASE DEFENSE

Swarming – a seemingly amorphous, but deliberately structured, coordinated, and strategic way to strike from all directions, by means of a sustainable pulsing of force and/or fire, close-in as well as from stand-off positions - will work best, and perhaps will only work, if it is designed mainly around the deployment of myriad, small, dispersed, networked maneuver units.

John Arquilla and David Ronfeldt, 1995, Swarming and the Future of Conflict

### A. WHAT IS SWARMING?

Indeed, in the military arena, swarming has the potential to become a new doctrine that will reshape the future of conflict as surely as the rise of blitzkrieg altered the face of modern war—from the Battle of France in 1940, to Operation Desert Storm half a century later.<sup>86</sup> Over the past decade swarming has emerged as an important military concept (Bonabeau, et al., 1999; Bonabeau & Meyer, 2001; Arquilla and Ronfeldt, 1995, 2000, 2001; Edwards, 2000). Although it has a number of related definitions, in general, swarming occurs when a collection of decentralized, often different units converge on an objective (or a problem) from multiple directions and re-disperse for future action. Swarming suggests the agility to rapidly concentrate the power of a highly networked force in any domain or dimension of warfare to dominate an adversary. Many of the most innovative ideas for U.S. military transformation relate in significant ways to this class of concepts.<sup>87</sup> Swarming will work best, and perhaps will only work, if it is designed mainly around the deployment of myriad, small, dispersed,

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<sup>86</sup> John Arquilla and David Ronfeldt, (1995) *Swarming and the Future of Conflict*, RAND Corporation, Santa Monica, CA.

<sup>87</sup> Obtained from the *Conference Proceedings for Swarming and Network Enabled Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR)*, held in McLean, VA, January 13-14 2003.

networked maneuver units (what, below, we will call “pods” organized in “clusters”<sup>88</sup>). Security forces operating within the area of influence qualify as ‘pods’ or ‘clusters’ depending upon the size of the smaller, dispersed law and order patrols or the larger, quick reaction force squads.

Swarming cannot work if it is based on traditional mass or maneuver formations. This is the same dilemma that current air base defense planners face today by limiting their dedicated security teams and quick reaction force units within the confines of the air base. Once these security elements are allowed to operate ‘outside the wire’ within the area of influence, these swarm units are not only internettted with each other, but also can coordinate and call upon other assets in the area through the exploitation of technological advancements. To achieve this, swarming depends upon the operation of a vast, integrated sensory system that can distribute not only specific targeting information but also overall top sight about conditions in and around the battle space.<sup>89</sup> Such technological advancements include linking ground force or Blue Force tracking capabilities (computer chips sewn into security forces’ uniforms or attached to their load bearing equipment as well fixed to their vehicles) with tactical C4ISR platforms that integrate the ground and air pictures into one common operating picture for the ground force commander to execute an IW operation. This concept of swarming is actually the missing piece to the air base defense puzzle on how to integrate the responses of both C4ISR assets and ground forces to create battle space dominance in irregular warfare.

According to Dr. Sean Edwards, whose 2000 RAND publication was titled *Swarming on the Battlefield: Past, Present, and Future*, “...the military application of emerging technologies for communications and information processing is likely to change the way military force is managed and applied. One possible change is the reemergence of a doctrine based on swarming, whereby military units organized as

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<sup>88</sup> The terms “pods” and “clusters” are developed by Arquilla and Ronfeldt and are used to describe decentralized teams (pods or in military terms – squads) that can respond individually to different scenarios or in fact respond together as a much larger force (clusters or in military terms platoons or companies) as a way to defeat or surround an enemy force. These terms can also apply to the way air operations are conducted while supporting the ground force commander in IW campaigns. Armed UAVs and other air assets may be dedicated to certain sectors for ISR and strike missions (pods) but may in fact respond together if need be (clusters) to overwhelm the enemy. The concept of decentralized command and control is important but further technological development is required before UAVs are able to truly operate autonomously (decentralized) while still providing a ‘human in the loop’ before strike actions are taken.

<sup>89</sup> Arquilla and Ronfeldt (1995), p. 45.

networks use dispersed yet integrated operations.”<sup>90</sup> Currently, the Air Force lacks a method for turning Air Base Defense doctrine into success at the tactical level within the area of influence. Today, the Air Force relies upon a small security and base defense element whose effort is focused on areas close to critical assets and whose ability to defeat a skilled adversary is limited by a lack of manpower, training, and equipment. The Air Force Integrated Base Defense (IBD) Concept of Operations (CONOPS) calls for improvement in training for all airmen and transformational technologies, which translates into increased capabilities. TTPs will require improvements to meet the volatile and dynamic threat spectrum (see the specific TTPs outlined in Chapter 4 under The Ends, Ways, and Means of Air Base Defense). They will require continuous development, testing, and revision to effectively integrate new technologies. Utilizing swarming as a concept not only for technological security systems but in security ground force employment creates an “Integrated Swarming Operation” that will clearly allow any security force to “See First”, “Understand First”, and “Act First” outside the wire within the area of influence in an unconventional environment.

## **B. SWARMING ADVANTAGES**

When swarms encircle a target, simultaneity is necessary to mass combat power in time and space. Swarms do not punch, they smother.<sup>91</sup> In January 2003, the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) sponsored a conference to examine swarming for its potential as an operational concept for future ground forces and for unmanned intelligence, surveillance, and reconnaissance (ISR)

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<sup>90</sup> Sean J.A. Edwards (2000). *Swarming on the Battlefield: Past, Present, and Future*. RAND Corporation Publication: Santa Monica, CA.

<sup>91</sup> Sean J.A. Edwards (2005). *Swarming and the Future of Warfare*. RAND Corporation Publication: Santa Monica, CA, p.101.

swarms.<sup>92</sup> The following are a list of advantages conference attendees, subject matter experts (SMEs), and military specialists determined were possible military advantages when it comes to the concept of swarming:

- Agility – faster decision-making
- Sharing information
- Operational options
- Reduced manpower – more autonomous systems
- Increased Situational Awareness
- Increased coverage of battlefield (UAVs, UUVs, Space Assets) – standoff assets
- Better match for current threats (counterinsurgency, peacekeeping, terrorism)
- Increases speed of forward deployment <sup>93</sup>

Examples of swarming on the battlefield are illustrated below in Figures 10-12.

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<sup>92</sup> U.S. Army, Air Force, and Navy transformation efforts are beginning to look at the potential roles for swarms of unmanned aerial vehicles (UAVs) and unmanned underwater vehicles (UUVs) on the battlefield. The Army's future unit of action (UA), the Air Force's Global Strike Force, and the Navy After Next will employ swarms of intelligent unmanned air, underwater, or ground vehicles. Persistent ISR swarms will sense, recognize, and adapt to the changing situation. The sensor networks will be self-aware, self-healing, and self-defending. See the *Army Objective Force Operational and Organizational Plan*, the *Air Force Air and Space Expeditionary Forces Concept of Operations*, the *Navy Unmanned Undersea Vehicle (UUV) Master Plan*, the theoretical Reconnaissance, Surveillance, and Target Acquisition (RSTA) Cloud Concept developed by the Marine Corps Concept Development Command (MCCDC), and the *Conference Proceedings for Swarming and Network Enabled Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR)*, held in McLean, VA, January 13-14 2003.

<sup>93</sup> From PowerPoint slides obtained from the *Conference Proceedings for Swarming and Network Enabled Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR)*, held in McLean, VA, January 13-14 2003.

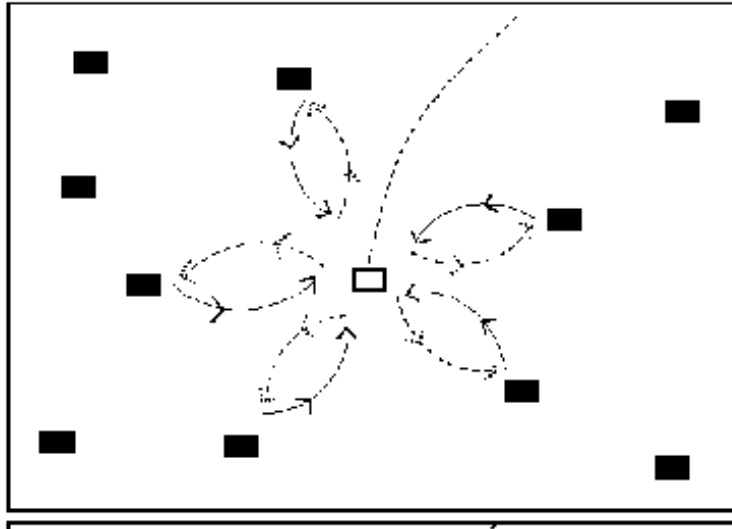


Figure 10 Swarming Tactics - Sustainable Pulsing; several or more units<sup>94</sup>

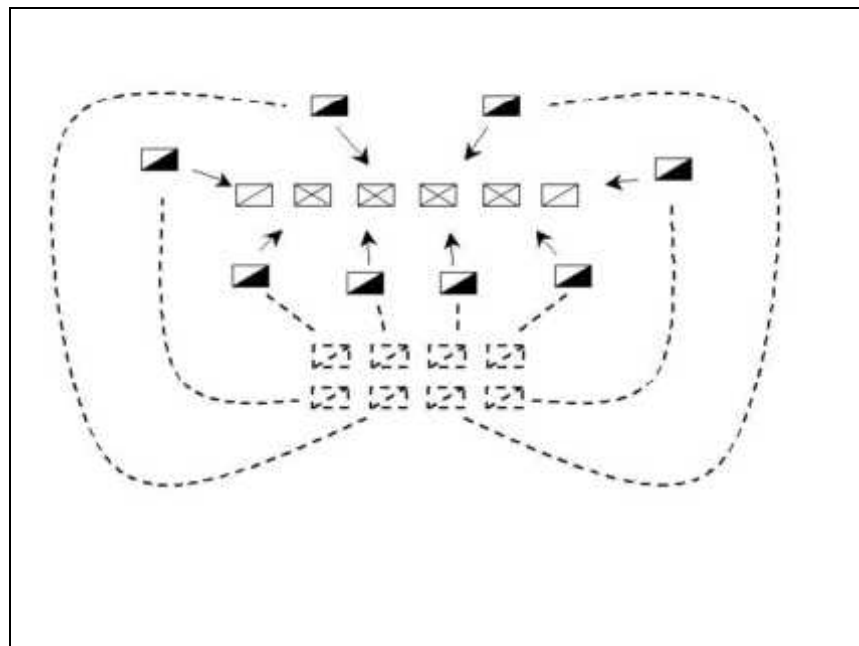


Figure 11 “Massed Swarm” or “Cloud Swarm”<sup>95</sup>

<sup>94</sup> Sean A.J. Edwards, (2005), *Swarming and the Future of Warfare*; p. 69.

<sup>95</sup> Ibid, p. 71.

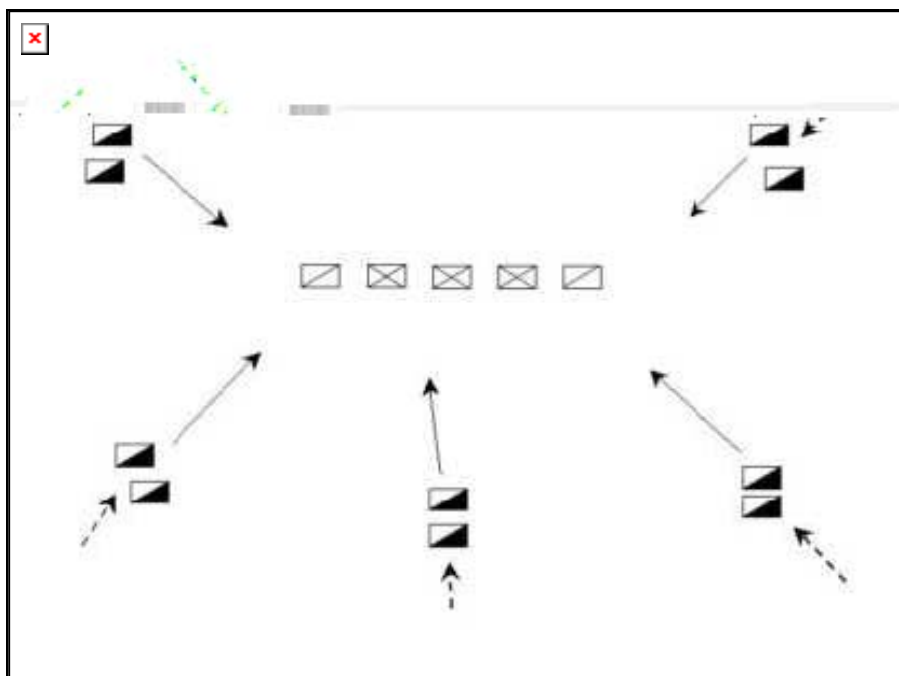


Figure 12 “Dispersed Swarm” or “Vapor Swarm”<sup>96</sup>

### C. ELUSIVENESS, SUPERIOR SITUATIONAL AWARENESS, AND STANDOFF CAPABILITY

Dr. Sean Edwards conducted extensive case study reviews involving 23 battles throughout military history where swarming was employed as a battlefield maneuver.<sup>97</sup> This analysis indicates that three “enablers” or advantages appear to play a predominant role in the outcome of swarming: elusiveness, superior situational awareness, and standoff fire capability. Edwards defines elusiveness as the ability to avoid the enemy and in all cases this was accomplished either through superior mobility or the use of concealment. Superior situational awareness implies knowing more about friendly and enemy unit locations and intent than your opponent. Standoff capability is the ability to inflict damage and receive less in return through some advantage in weapons (greater range) or in relative self restraint (one side adheres to Law of Armed Conflict while the

<sup>96</sup> Sean A.J. Edwards, (2005), *Swarming and the Future of Warfare*, p.71.

<sup>97</sup> For more information on these case studies see Sean J.A. Edwards (2005). *Swarming and the Future of Warfare*. RAND Corporation Publication: Santa Monica, CA. Dr. Edwards is currently an analyst for the National Ground Intelligence Center (NGIC).

other does not).<sup>98</sup> Within the execution of the three phases of ABD in irregular warfare, four principles of irregular warfare emerge that are very consistent with Edward's three key enablers of swarming.

In Phase I of the ABD strategy for IW, by establishing effective control over the population through persistent, tactical ISR, security forces are able to truly "See" the enemy "First." In doing so, the effect of surprise on the battlefield is an advantage security forces possess not the enemy. Surprise is when a force accrues disproportionate advantage through action for which an adversary is not prepared. Surprise can help the commander shift the balance of power and thus achieve success well out of proportion to the effort expended. Factors contributing to surprise include speed in decision making, information sharing, and force movement; effective intelligence; deception; application of unexpected combat power; operations security; and variations in tactics and methods of operation.<sup>99</sup> Surprise and what Edwards's calls elusiveness are two similar principles that can be obtained through the successful implementation of Phase I of the ABD IW strategy.

In Phase II of the ABD IW strategy, security forces predict enemy COAs, target enemy relationships with any supporting elements of the population as well as infrastructure elements vital to the survival of their cause (people, guns, and money). In doing so, security forces begin to achieve battle space dominance in which they seize the information advantage away from the enemy and establish counter attacks, block enemy forces or intercept threats to air bases as well as the population. Under the IBD objective of "Understand First", security forces' superior situational awareness within their area of influence allows them to respond with speed and maneuver. Just as Admiral Bill McRaven, the first Special Operations, Low Intensity Conflict (SOLIC) graduate from the Naval Postgraduate School, proposes one of the six principles of special operations is speed, his definition is appropriate for irregular warfare specialists: "Get to the objective as soon as possible. It is essential to move as quickly as possible regardless of the

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<sup>98</sup> Edwards, 2005, p. 85.

<sup>99</sup> William T. Johnsen, Douglas V. Johnson II, James O. Kievit, Douglas C. Lovelace, Jr., Steven Metz. "The Principles Of War In The 21st Century: Strategic Considerations." August 1 1995, p. 33. [http://www.dtic.mil/doctrine/jel/research\\_pubs/princwar.pdf](http://www.dtic.mil/doctrine/jel/research_pubs/princwar.pdf).



enemy's reaction.”<sup>100</sup> By understanding and predicting the enemy COAs, security forces can focus their maneuver in the most direct ways to block, contain or neutralize infrastructure support or enemy forces. Their information advantage translates to a faster, more direct response. Maneuver places the enemy in a position of disadvantage through the flexible application of combat power. Maneuver is the movement of forces in relation to the enemy to secure or retain positional advantage, usually in order to deliver—or threaten delivery of—the direct and indirect fires of the maneuvering force. Effective maneuver keeps the enemy off balance and thus protects the friendly force. It contributes materially in exploiting successes, preserving freedom of action, and reducing vulnerability by continually posing new problems for the enemy.<sup>101</sup> A swarming response by security forces in the area of influence, while exploiting the technological advantages over the enemy, only solidifies the principles of *speed* and *maneuver*. Phase II of the ABD IW strategy, and more specifically the IBD objective of “Understand First” is synonymous with Edwards’ second swarming advantage of superior situational awareness (SSA).

Lastly, when all three phases have been employed within the area of influence, the information dominance, combined with the application of force, allows security forces to “Act First” and creates a principle called efficiency of lethality. The tactical C4ISR assets have tremendous standoff capability they can bring to bear in irregular warfare as demonstrated through the employment of the J-STARS near Balad and through the testimony of the air boss for CENTCOM. Although air assets with the help of a few skillfully trained FACs or TAC-Ps can guide laser guided bombs through windows or Hellfire missiles through doorways, their lack of integration with IW trained ground forces in the tactical environment fail to demonstrate the true capabilities air power can bring to bear in the fighting and winning of irregular warfare campaigns. Current ground operations today, as previously mentioned, lack actionable human intelligence that is so vital in conducting air strikes against enemy personnel or high value targets in COIN

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<sup>100</sup> William H. McRaven (1995). Spec Ops: Case Studies in Special Operations Warfare: Theory and Practice. Presidio Press Book: New York. p. 19.

<sup>101</sup> Johnsen, Johnson, Kievit, Lovelace and Metz, (1995) p.32.

operations. Only when all three phases of the ABD strategy are executed on the battlefield will this new principle called efficiency of lethality become reality.

Below is a table comparing the integrated swarming operations key components and principles of IW with that of Sean Edwards’ principles extracted from 23 case studies involving swarming on the battle field.

<b>IBD Objectives</b>	<b>Mission Essential Tasks</b>	<b>COIN Operations – security forces</b>	<b>Principles of ISO</b>	<b>Swarming Advantages</b>
“See First”	Tactical or persistent ISR	Secure the population	Surprise	Elusiveness
“Understand First”	Intercepting the threat	Target enemy infrastructure/support	Speed and maneuver	Superior Situational Awareness
“Act First”	Application of Force	Target enemy positions/camps	Efficiency of lethality	Standoff Capability

Table 3 Comparison of Integrated Swarming Operations with Edwards’ Swarming Advantages

As with all types of military forces, swarms seek to use fire, maneuver, and information – the three basic elements of combat power - to defeat enemy forces (a term ground forces call “shoot, move, communicate”). Swarms apply fire and maneuver in their own unique way by encircling a target and maximizing the number of directions of attack. For air base defense applications, the swarming of technologies will defend or protect an air base from standoff attacks while simultaneously “pushing” collected intelligence and information through ruggedized tablets or terminals to the ground force commander and response forces. The principle of surprise often leads to local superiority of force, but more importantly, it also imparts a significant psychological advantage to the attacker because human beings generally need to be emotionally prepared in order to

engage in combat. The soldier needs to be “psyched up” for a confrontation. As psychologist David Grossman puts it, “An attack launched at a time and place when the soldier thought he was safe takes advantage of the stress of uncertainty, destroys his sense of being in control of his environment, and greatly increases the probability that he will opt for flight (i.e., rout) or submission (i.e., mass surrender).”<sup>102</sup> This is one important outcome that can occur when the Air Force adopts this new ABD strategy for irregular warfare.

#### **D. ENHANCED FORCE PROTECTION AT AIR BASES**

A major premise of swarming is multiplying the number of platforms that a single war fighter can effectively control.<sup>103</sup> In a Base Defense Operations Centers (BDOC)<sup>104</sup>, a solid radio/telephone operator (RTO) has the keen ability to multi-task and tracks numerous security incidents simultaneously. When technology is truly integrated and has the ability to swarm the tactical battlefield, several key tactical successes can occur: Achieving ground combat time critical targeting (TCT); enhancing protection through increased security system effectiveness; providing a Common Operational Picture for detection, assessment, and response; reducing reliance on manpower if “swarmed” properly and allowing for the “Find, Fix, Track, Target, Engage, Assess” methodology all within seconds.<sup>105</sup> Only when tactical base defense specialists learn to deploy these types of technological swarming applications will they be able to enhance force protection operations by replacing static security manpower with technology as they transition from the compliance-based problem of air base defense to a capabilities-based solution. The Air Force has set-up a joint, integrated physical security system with the

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<sup>102</sup> David Grossman, “Defeating the Enemy’s Will: The Psychological Foundations of Maneuver Warfare,” in Richard Hooker (ed.), *Maneuver Warfare*, Novato, CA: Presidio Press, 1993, p. 162.

<sup>103</sup> H. Van Dyke Parunak, (2003) *Making Swarming Happen*, Altarum Institute p. 3.

<sup>104</sup> A command and control facility established by the base commander to serve as the focal point for base security and defense. It plans, directs, integrates, coordinates, and controls all base defense efforts and coordinates and integrates into area security operations with the rear area operations center/rear tactical operations center. Also called **BDOC**. (JP 3-10.1)

<sup>105</sup> July 20 2005, Northrop Grumman Mission Systems PowerPoint slides from Leap Ahead II IBD Command and Control Demonstration and Evaluation, Eglin AFB, FL. Information provided was related to the Enhanced Tactical Automated Security System (E-TASS) upgrades currently being funded by various services throughout the world including locations in Iraq to protect/defend air bases. This is not a promotional endorsement for Northrop Grumman Mission Systems but only citing the current possibilities/advantages/roles technology is playing in ABD and IW campaigns.

Army at Balad Air Base, Iraq where this concept is being proven. Essentially, the Air Force and Army have integrated standalone security systems (wireless mass notification systems, long range wide angle surveillance thermal imagers w/ infrared, ground surveillance radars, counter rocket, mortar technology) into an integrated physical security system that can literally track mortar launches, plot impact points, alert the sector where the mortar will impact and auto slew camera systems to pinpoint the launch site all within seconds. They are experimenting now with relaying this enemy information to dedicated C4ISR assets to interface ground technology with air superiority/air dominance. The critical missing piece to this operation is that they lack a constant presence within the area of influence and therefore do not control or provide security for the local population.<sup>106</sup> With a reliable, technological swarming security system that truly counters enemy standoff attacks, highly trained security force personnel can be replaced by other, highly skilled airmen furthering the Air Force's new battle cry that "Every Airmen is a Warrior."

A point of contention with the integration and reliance on technology in ABD is the vulnerability that the system poses as a potential target. Most military planners would agree that in a conventional campaign plan, taking down a state's information and communication systems is a critical aspect of the battle plan and involves targeting the infrastructure center of gravity as depicted in Warden's Five Strategic Rings in Chapter III. However in irregular warfare campaigns, these non-state actors usually do not possess the capability to attack such technologically sophisticated equipment or lack the opportunity to attack these infrastructure sites at fortified, well-protected air bases. The most plausible attacker during an irregular warfare operation would be the Level I threat – an insider or saboteur. Air bases are so heavily guarded, especially at the entry control points that the threat appears relatively low that such a cyber attack on the technological swarming system could occur. A crucial aspect of vulnerability management is the use of the CARVER matrix to assist military planners in red teaming their critical infrastructure locations, entry procedures, and overall security effectiveness. During the Vulnerability

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<sup>106</sup> E-mail interview with Major Jason Knudsen, AF Security Forces Officer, serving as the Battle Captain assigned to the Joint Defense Operations Center (JDOC) at Balad Air Base, Iraq. Also, Northrop Grumman Mission Systems designed the integration of these systems as an add-on to their current E-TASS in which the author witnessed first-hand tests and evaluations at Eglin Air Force Base in July 2005.

Analysis phase, a matrix is developed to show the relationship between asset, threat and consequence of loss. The matrix shows which assets face the highest probability of attack and which threats pose the greatest risk to the organization so that vulnerabilities can be rated as to their overall risk to business continuity.<sup>107</sup> Antiterrorism officers at installations around the world use this matrix as a method to review current security plans, operations, and TTPs for all base agencies that contribute to a sound force protection environment. The C.A.R.V.E.R. Matrix is a decision tool used by U.S. Special Forces for rating the relative desirability of potential targets and for properly allocating attack resources. The C.A.R.V.E.R. selection factors of Criticality, Accessibility, Recuperability, Vulnerability, Effect and Recognizability assist in selecting the best targets to attack. As the factors are analyzed and values assigned, a decision matrix is formed, indicating the highest value target to be attacked within the limits of the statement of requirements.<sup>108</sup> This same methodology is applied when positioning critical resources on an installation and utilized during an installation's local vulnerability assessment. Local vulnerability assessments conducted in conjunction with representatives from all base agencies provide insight into what resources may require additional levels of protection (C4I centers, aircraft parking areas, unique, one-of-a kind systems etc) or resources to enhance the protection of the system thus limiting the exposure of the vulnerability. Attack scenario planning generated during a local vulnerability assessment includes the full spectrum threat from overt, physical attacks to cyber and information systems attacks.

#### **E. GROUND FORCE SWARMING TTPS**

History demonstrates that the greatest weakness of swarms is its difficult command and control problem and the resulting lack of coordination of multiple units during the attack of a single target.<sup>109</sup> The most aggressive Non-Linear Dispersed (NLD) tactic is to swarm and apply pressure at all points repeatedly over time to accomplish a psychological breakthrough and destroy the cohesion of the enemy. Edwards defines

<sup>107</sup> Michael Taylor, "Identifying Vulnerability: Enhancing Operational Security in the Post 9-11 World" American International Security Corporation, p. 4. Retrieved from <http://www.aisc-corp.com/assets/IdentifyingVulnerability.pdf>ved. Also see Joint Pub 3-05.2, TTPs for Special Operations Targeting and Mission Planning, dated May 23 2003.

<sup>108</sup> Ibid, p.6.

<sup>109</sup> Edwards, 2005, p. 145-46.

non-linear dispersed operations as military operations in which units move and fight in multiple directions (i.e., are nonlinear), are widely separated (i.e., are dispersed), and are capable of supporting each other by concentrating mass or fires (i.e., are dynamic).<sup>110</sup> Even our enemies have adapted this type of battlefield tactics. As Edwards describes: “Indeed, non-linear, dispersed operations (NLDOs) are already occurring in real world operations. In Operations Enduring Freedom (2001) and Iraqi Freedom (2003) our adversaries quickly dispersed into mountainous or urban terrain after a short conventional fight. This dispersion naturally resulted from their adoption of guerrilla warfare, an asymmetric response to our conventional superiority and establishment of air superiority.”<sup>111</sup> Below is a comparison between non-linear dispersed forces (NLDs) and conventional warfare forces. Notice the main differences that are more suitable in irregular warfare campaigns under the guise of integrated swarming operations for air base defense (fire and maneuver, combat, casualties over time, duration, and total casualties).

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<sup>110</sup> Edwards, 2005, p. xviii.

<sup>111</sup> Ibid, p. 8.

<b>NLD Forces</b>	<b>Conventional Warfare</b>
<b>Fire and maneuver</b> “Fireflies in the night”	Sweeping flank movements
<b>Concentration</b> Local clustering in annulus or circle only	Dense concentrations desired for frontal attack and penetrations
<b>Logistics</b> Lattice of capillaries and more Logistical Support Areas (LSAs)	Several main arteries trailing back from 2 opposing fronts
<b>Combat</b> Large # of very small engagements	Small # of large battles
<b>Casualties over time</b> Incremental	Large step increases
<b>Duration</b> Long	Short
<b>Total casualties</b> Low	High

Table 4      Non-Linear Dispersed Forces Compared to Conventional Warfare Forces<sup>112</sup>

#### **F.      DOMINATING THE AREA OF INFLUENCE**

Situational awareness (SA) is obviously crucial for relatively more separated swarm units. Swarm units need to know where the enemy is in order to encircle him or to run away when threatened with destruction in detail. They need to know when to attack to achieve simultaneity with other friendly units and they need to arrange themselves properly in the annulus to avoid fratricide. Superior situational awareness (SSA) also supports concealment. By definition, if you possess superior situational awareness, you

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<sup>112</sup> Edwards, 2005, p. 140.

have more information (unit locations, activity, intent, etc) about the enemy than he has about you. It is more difficult to conceal your location from the enemy when his situational awareness is superior to yours.<sup>113</sup> When security forces are conducting law and order patrols, the population and enemy, if attempting to hide within the population, must be able to see their constant presence. Many times in counterinsurgency operations, security forces want the population to see their 24/7 patrolling. The advantages Edwards' describes above are more aptly suited for quick reaction forces (QRFs) conducting the three phases of COIN operations.

Although some swarming experiments are over 10 years old, they still show validity and promise for the way future warfare could be conducted. For instance, in John Arquilla and David Ronfeldt's *Swarming and the Future of Conflict*, they discuss prior swarming military experiments like the Army's 7<sup>th</sup> Special Forces Group in 1994.

In Battle Command Training Program (BCTP) simulation exercises during the first months of 1994, the 7th Special Forces Group attached itself to the XVIII Airborne Corps in war games aimed at figuring out how to defend Saudi Arabia with light forces. Initial exercises went poorly, overall, for the light force—which often held up the invaders but always incurred very heavy casualties. In this first phase, the Special Forces were used almost exclusively for reconnaissance—as was the case during Desert Shield/Storm, along with coalition support. But at one point, the commander of the Special Forces asked that his small, dispersed units be given strike designation tasks as well. The results were both immediate and astonishing: The Special Forces became the enablers of highly effective swarming of fire. Heavily armored invaders were routinely defeated—and XVIII Corps casualties plummeted, on average, by over 80 percent.<sup>114</sup>

The phenomenon of swarming is likely to have overarching effects on military affairs in the coming years. Swarming is also attractive because of the ease with which those who apply it can shift from offense to defense, and vice versa. The Chechen bands of fighters that defeated the Russian Army in the 1994–96 war used swarming both offensively and defensively—and were highly effective at both.<sup>115</sup> Although a decade old in theory, Arquilla and Ronfeldt challenge military strategists and theorists to adopt a

<sup>113</sup> Edwards, 2005, p. 89.

<sup>114</sup> Arquilla and Ronfeldt, 1995, p. 82. They also cite Lieutenant Colonel Edward L. Phillips article, "Special Forces Direct Action," *Special Warfare*, Vol. 8, No. 2, April 1995.

<sup>115</sup> Arquilla and Ronfeldt, 1995, p. 43.



type of swarm to the tactical battlefield. Although we have examined partial swarm employment on the battlefield like the Marine maneuver elements in Fallujah, the tactical doctrine does not exist. For these reasons, the U.S. military would be well advised to proceed ahead now with the development of a swarming doctrine of its own. If the military does not do so, the risks may grow that American soldiers will—one day soon—be caught by a kind of doctrinal surprise.<sup>116</sup>

SUMMARY: In Chapter V, the concept of ‘swarming’ as the primary technique to synchronize both ground forces and C4ISR platforms into an integrated, irregular warfare strategy were introduced. The military advantages of swarming on the battlefield were presented along with three key enablers. Ground force swarming TTPs were discussed along with a comparison between non-linear dispersed forces and conventional warfare forces.

Chapter VI highlights several main points and clearly brings relevance regarding the future of IW for today’s military. In developing this air base defense strategy for irregular warfare, it provides the way ahead for the transformation of the Air Force Security Forces career field in future irregular warfare campaigns.

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<sup>116</sup> Arquilla and Ronfeldt, 1995, p. 44.

## **VI. THE NEW FRAMEWORK FOR AIR BASE DEFENSE IN IRREGULAR WARFARE**

This is another type of war, new in its intensity, ancient in its origins—war by guerrillas, subversives, insurgents, assassins; war by ambush instead of by combat; by infiltration, instead of aggression, seeking victory by eroding and exhausting the enemy instead of engaging him. It requires in those situations where we must counter it a whole new kind of strategy, a wholly different kind of force, and therefore anew and wholly different kind of military training.<sup>117</sup>

John F. Kennedy

The U.S. military has a 60 year-old problem of adequately protecting and defending its' air bases. The case studies mentioned in chapter two clearly show that enemy forces will resort to irregular warfare tactics, techniques, and procedures as their primary method of attack. The U.S. military by in-large has been ill-prepared, equipped and trained to handle this type of warfare. Since 75% of all attacks to air bases occur within the “area of influence”, this new Air Force term should become the cornerstone for all services to adopt in air base defense planning operations. This thesis conducted an intensive review of past guerilla, rebellion, and insurgent campaigns drawing together the successful examples of defeating irregular warfare forces. Furthermore, it identified irregular warfare centers of gravity adopted from a counterinsurgency model developed by Professor Gordon McCormick. A strategy has been developed albeit at the tactical level through the ends, ways, and means approach: Integrated Base Defense objectives of “See First”, “Understand First”, and “Act First”, are carried out through the Air Force Security Forces' Air Base Defense Mission Essential Tasks (persistent or tactical ISR, intercepting the threat, and application of force) by implementing a counterinsurgency strategy that secures the population first, then targets enemy infrastructure and support, and lastly, directly targets enemy forces.

To synergize this new strategy for air base defense, I've integrated the concepts and military advantages of swarming that essentially focus on interfacing ground forces, technology, and TTPs into an aggressive, irregular warfare air base defense strategy. As

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<sup>117</sup> Roger Hilsman, *To Move a Nation* New York: Doubleday and Co., 1967, p. 414.

the Air Force continues to adapt for the future, changes to the security forces career field will affect the total force. Brigadier General Robert Holmes, Director of Air Force Security Forces and Force Protection, calls these transformations a “refocus” on how his people train and fight. “We’re not in the Cold War anymore; we have to alter our mentality and our practices for today’s reality,” the general said. As an example, he cited an Air Force task force that operated around Balad Air Base, Iraq, for two months last year. The unit patrolled the local towns and found weapons caches as well as individuals who posed a threat to the base. “Our Airmen are going ‘outside the wire’ to conduct missions and are proving successful in keeping people safe,” General Holmes said. “Not only for the folks stationed at the base, but people who live and work in the local area as well. This is very important in the present war on terror.” Security forces must learn counterinsurgency techniques to operate more effectively in joint operations, said Major General Norman Seip, Assistant Deputy Chief of Staff for Air and Space Operations. “We need to be prepared for a full spectrum of threats against an air field,” General Seip said. Overall, General Holmes said the changes would make security forces more effective and relevant to Air Force needs in the face of the current changing nature of warfare. “We want to make our Airmen more proficient, and to do that, we need to adapt,” General Holmes said. “We’re going to change our training, our tactics and our procedures and the Air Force will be better for it.”<sup>118</sup> This thesis provides a solution to the 60 year-old problem of ineffective air base defense operations during irregular warfare.

Current and future manpower numbers suggest a Total Force effort is required to conduct base defense. How can the Air Force integrate current capabilities into their base defense missions while providing better, more capable force protection assets into the expeditionary environment? We do it by transforming our mindset and truly believing in our strong, educated enlisted troops and young officers. The Air Force does it by moving its police professional security forces into the “area of influence” to conduct counterinsurgency operations and through backfilling their departure from the air bases with highly-trained airmen from other Air Force Specialty Codes (AFSCs) essentially

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<sup>118</sup> Senior Airman J.G. Buzanowski, “Security forces transformation to affect total force.” Air Force Print News; <http://www.af.mil/news/story.asp?id=123014602> downloaded January 20 2006.

making every airman a warrior! Added to the air base defense operations is an array of technological suites designed to counter enemy standoff attacks while improving the coordination between airman defending the air base, security forces patrolling within the “area of influence”, and Air Force pilots and UAV controllers owning the air space.

This complete departure from the air base defense missions currently employed worldwide is exactly the ‘shift of emphasis’ or transformation today’s Senior Air Force Leaders demand. Transformation does not have to be a dirty word. Most people do not understand what the term really means and therefore causes ripples of confusion throughout the chain of command. According to the former Air Force Chief of Staff, General John Jumper, explaining the term transformation to an institution (like the Air Force) that has been stove piped for years is annoying: “It’s very frustrating to think that people view transformation as getting rid of everything we have right now rather than integrating that which we already own...”<sup>119</sup> This integration of assets is exactly the premise for this thesis and results in a needed transformational shift from Cold War static, garrison-type forces to scalable, highly mobile, irregular warfare forces.

These forces require proper education and training while ensuring we better organize and equip for irregular warfare campaigns. This is the future expeditionary force. The Quadrennial Defense Review (QDR) — a major overhaul of defense strategy — calls for moving beyond a military configured exclusively for fighting mirror-image adversaries. “In the post-September 11 world, irregular warfare has emerged as the dominant form of warfare confronting the United States, its allies and partners,” the QDR states. To win what the QDR calls the “Long War” — the Global War on Terror — it calls for strengthening such areas as “counterterrorism, counterinsurgency and stabilization and reconstruction operations.”<sup>120</sup> Properly training ground forces in counterinsurgency and irregular warfare strategies is the first step. The 2006 QDR draft Irregular Warfare Study reports “a need for changed approaches to IW”<sup>121</sup> across the Department of Defense. The QDR IW Study notes that in an analysis of 127 U.S.

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<sup>119</sup> Nicole Gaudiano. *Old Warrior, New Ideas*. Air Force Times: May 20 2005 p. 20.

<sup>120</sup> Max Boot, “The Wrong Weapons for the Long War.” Los Angeles Times, February 8 2006. Retrieved on February 8 2006 at <http://la-oe-boot8feb08,0,2073057.column.htm>.

<sup>121</sup> DOD Quadrennial Defense Review(QRD) 2006, vers 3.1 Washington DC: US Government Printing Office [GPO], May 23 2005.

pacification operations in Iraq between May 2003 and May 2005, ‘most ops were reactive to insurgent activity---seeking to hunt down insurgents. Only 6% of ops were directed specifically to create a secure environment for the population.<sup>122</sup>

The second step involves funding, fielding, and testing swarming technologies for integrated base defense security systems that will enable all airmen to become better and more capable base defense specialists as we have seen from Balad Air Base. These integrated security systems should be purchased and maintained at most Major Command (MAJCOM) Regional Training Centers (RTC) to include the Air Force’s basic military training center at Lackland Air Force Base, Texas. The third step is to train RTC cadre on enemy TTPs so that realistic scenarios can be played out to the fullest extent possible to maximize both education and training opportunities. Cadre must be able to Red Team insurgent TTPs.<sup>123</sup> The fourth step is critical and allows for further training of ground forces in the ability to call for fire or close air support (CAS) missions or through assigning forward air controllers or tactical air control party specialists within security forces units. Also, a truly integrated swarming operation incorporates the Air Force’s robust air power capabilities into the battle field scenarios. Just as we have seen today in Iraq and Afghanistan, conventional aircraft are using unconventional methods to find, fix, track, and target Iraqi insurgent and Taliban forces. The technological superiority can be best put to use only when the ground forces control and secure the local population and adhere to the basic fundamentals of sound counterinsurgency tactics, techniques, and procedures. By focusing on the three IBD objectives as a way to measure effectiveness levels, the Air Force can easily transition from the current, ineffective air base defense doctrine into an integrated swarming operation for air base defense.

The United States Air Force has the most educated and professional young enlisted members in the world and in order for this new strategy to gel and be properly

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<sup>122</sup> Brigadier Nigel Aylwin-Foster, British Army, “Changing the Army for Counterinsurgency Operations” Military Review: Nov-Dec 2005, p. 5.

<sup>123</sup> Red teaming is a technique that involves viewing a potential target from the perspective of an attacker to identify its hidden vulnerabilities, and to anticipate possible modes of attack. This usually involves the use of US Special Operations Forces to conduct penetration tests that replicate a real-world adversary who is trying to gain access to the installation to achieve a specific purpose (e.g., intelligence gathering, theft, disruption of air operations). However, Red Teaming can be successfully conducted at a lower level with the use of sand tables, round table discussions and syndicate work - it does not have to involve the use of force on force specialist teams. AFTTPs 3-10.1, August 20 2004; p. 35.

executed, the backbone of America's military power must be better educated. As Sun Tzu, the author of The Art of War, an immensely influential ancient Chinese book on military strategy, once said, "Know your enemy. If ignorant both of your enemy and of yourself, you are sure to be defeated in every battle."<sup>124</sup> This thesis provides the ways and means of understanding this irregular enemy. Through the implementation of integrated swarming operations, a new framework for air base defense during irregular warfare campaigns has evolved.

Lastly, with the release of this year's Quadrennial Defense Review (QDR), several concepts included within this thesis may provide solutions for the need to "find, fix and finish" combat operations against new and elusive foes. If one were to attempt to characterize the nature of how the Department of Defense is transforming and how the senior leaders of this Department view that transformation, it is useful to view it as a 'shift of emphasis' to meet the new strategic environment. This thesis has relevance in the fighting and winning of IW campaigns of the future. Some premises that are similar to the vision statements mentioned in the QDR are listed below. In this era, characterized by uncertainty and surprise, examples of this shift in emphasis include:

- From 20th century processes – to 21st century integrated approaches.
- From major conventional combat operations – to multiple irregular, asymmetric operations.
- From threat-based planning – to capabilities based planning.
- From a focus on kinetics – to a focus on non-kinetic or effects-based operations.
- From static defense, garrison forces – to mobile, expeditionary operations.
- From under-resourced, standby forces (hollow units) – to fully-equipped and fully-manned forces (combat ready units).
- From large institutional forces (tail) – to more powerful operational capabilities (teeth).
- From separate military Service concepts of operation – to joint and combined operations.
- From forces that need to de-conflict – to integrated, interdependent forces.

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<sup>124</sup> Hanzhang, Tao. General (1990). *Sun Tzu's Art of War*. Sterling Publishing Co., Inc: New York.

- From exposed forces forward – to reaching back to CONUS to support expeditionary forces.
- From an emphasis on ships, guns, tanks and planes – to focus on information, knowledge and timely, actionable intelligence.
- From massing forces – to massing effects.
- From set-piece maneuver and mass – to agility and precision (Surprise, Speed and Maneuver, and Efficiency of Lethality).
- From single Service acquisition systems – to joint portfolio management.
- From vertical structures and processes (stovepipes) – to more transparent, horizontal integration (matrix).
- From moving the user to the data – to moving data to the user.
- From predetermined force packages – to tailored, flexible forces.<sup>125</sup>

Just as the Report of the 2006 QDR represents a snapshot in time of the Department's strategy for defense of the Nation and the capabilities needed to effectively execute that defense, so is this thesis: a tactical level snapshot that could ensure success in protecting our service members and resources during irregular warfare campaigns. The 2006 QDR has said the ideas and proposals within the document are provided for a roadmap to change, leading to victory...for irregular warfare, so too are the air base defense strategies developed in this thesis. In addition, several critical elements from the 2006 QDR Report will complete the insurgent and compelling need to transform current Air Force security forces into IW capable ground force. Just as the Air Force continues to provide air superiority and air dominance in IW campaigns, it too must also treat the air base defense mission with the same vision and focus to defend and 'fight' its air bases.

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<sup>125</sup> Quadrennial Defense Review Report, February 6 2006; Preface, p. 8-9.

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